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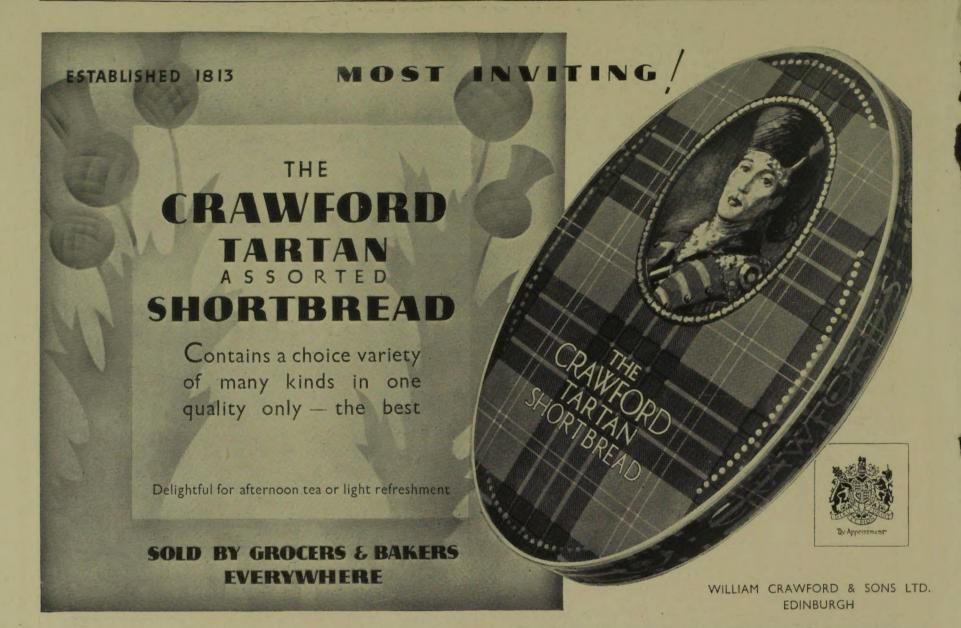




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ST. PAUL'S AS IT IS FOR THE CHRISTMAS SEASON: THE KING'S CHRISTMAS TREES ILLUMINATED AND FLANKING THE FLOODLIT PORTICO, WHERE THEY WILL REMAIN UNTIL TWELFTH NIGHT.

For the Christmas Season, St. Paul's Cathedral is gay with light. Not only is the famous dome floodlit by means of the apparatus used for the King's Silver Jubilee celebrations, but two 22-ft.-high Christmas trees, given by his

PHOTOGRAPH SPECIALLY TAKEN FOR "THE ILLUSTRATED LONDON NEWS" BY WILLIAM DAVIS.



By G. K. CHESTERTON.

HRISTMAS, which the calendar assures me is coming, has been the crux of more controversies than most people remember when they take advantage of the fortunate fact that it has been so often saved from its enemies. But, like any other good thing, it has suffered much less from the heat of fanatical foes than from the coldness of frigid friends. Fanaticism only encouraged the devout to be defiant, and they resolutely repeated it as a ritual; it was much more in peril of death where people only repeated it as a routine. Now, a ritual is almost the opposite of a routine. It is because the modern world has missed that point that the modern world has in every other way fallen more and more into routine. The essence of real ritual is that a man does something because it signifies something; it may be stiff or slow

or ceremonial in form; that depends on the nature of the artistic form that is used. But he does it because it is significant. It is the essence of routine that he does it because it is insignificant. It is the whole point of the ritualist that he knows what he is doing. It is the whole point of the routine worker that he does not know what he is doing. It may be an advantage that he should perform such dull tasks in such a detached way it may be argued that it is better for the work or for the world that it should have routine that is only routine. It may be better, for those who like it, that a man should work in this unconscious fashion; it may be better that he should be an animal; it may be better that he should be an automaton. But it is not the same thing as the man expressing some idea by performing certain acts, even if we think they are antics. It is not the same thing as a man practising the sacred and solemn art and craft of a mummer, even if we dislike all such mummery The principle of ancient ritual is to do certain useless things because they mean something. The principle of modern routine is to do certain useful things, but to free our-selves from that degrading slavery by doing them as if they meant nothing.

are still to some extent limited by the idea of a Christmas ritual, and the recurrence of times and seasons The thing is done at a particular time so that people may be conscious of a particular truth; as is the case with all ceremonial observances, such as the Silence on Armistice Day or the signal of a salute with the guns or the sudden noise of bells for the New Year. They are all meant to fix the mind upon the fact of the feast or memorial, and suggest that a passing moment has a meaning when it would otherwise be meaningless. Behind the opposite notion of emanci-pation there is really the notion that we should be more normal if all moments were meaningless. The old way of liberating human life was to lift it into more intense consciousness; the new way of liberating it is to let it lapse into a sort of absence of mind.

anything, then I disagree with them upon a purely intellectual issue. It seems to me that human life tends of itself to become much too monotonous and mechanical; and that this is just as true of lax social habits as of stricter ones. If the object is to make life more intense and intelligent, to increase imagination, which is a sense of the meaning of things, then I think it can be done much better by keeping dates and seasons and symbolic actions, than by letting everybody and everything drift.

The modern world has, in the literal sense of the word, made everybody much too insignifi-cant. It has, in the old Greek sense of the word, made every man far too much of an idiot. For insignificance only means lack of significance; and

idiot in the old Greek sense only meant a man without any public or philosophic or religious significance. I might, to my deep and desolating grief, cause offence if I said that the commercial and industrial world is now conducted by a vast army of idiots. But Plato would have understood what I mean; and many are more and more understanding it, especially those who substitute the more respectful description of an army of ants. What is called the Termite State has followed on what was understood, or rather not understood, by the Servile State. It is only too likely, on the face of it, that the ant-hill will rise higher than the mere mountains like Sinai or Olympus or Calvary; that mankind will be directed to a monstrous uniformity in which the individual ideals of the past will be lost; and that the quarrels of the sects will yield to the complete comradeship of the insects. But any man who keeps Christmas in his own home is resisting the tragic transformation of the home into

For reasons that it would be indelicate to mention here, I do not believe that Christmas will perish; or that the human beings who are all reborn in Bethlehem will ever

actually become ants and bees. They can only for a century or two try the experiment of being bad bees and extremely inefficient ants. For no bee ever did try to swarm alone; none (if I may be so flippant) ever put to himself the morbid human problem of "to bee or not to bee"; and though the sluggard may perhaps learn from the ant, there never an ant who attempted to learn anything from the sluggard may perhaps learn from the ant, there never was an ant who attempted to learn anything from the dreams and reveries of the sluggard. The Servile State might exist, for the Servile State has existed. But the Termite State will never really exist, but only some horrible parody of human beings pretending to be inhuman. But if individuals ever became like insects, or if insects ever became like individuals, there is one way in which the latter would proclaim their liberation; and that is by the proclaim proclaim their liberation; and that is by the proclamation of fixed festivals and forms. If bees ever do buzz carols in honour of a dead bee, or ants set up a sacred image of a divine ant on the top of the anthill, then we shall know that the isolation of man is invaded, and his unique work in the universe has a parallel. But in the cheery reunion of Christmas I ask as many professors as I know, and none of them seems to think it is probable.



AMERICA'S MOST FAMOUS RACEHORSE PORTRAYED BY A DISTINGUISHED ANIMAL SCULPTOR; MR. HERBERT HASELTINE'S GOLD-FLATED BRONZE STATUETTE OF MAN O' WAR, WITH A GOLDEN-RED PATINA RECALLING THE HORSE'S COLOUR. Mr. Herbert Haseltine, the distinguished sculptor of animals, whose beautiful work has often been illustrated in our pages, recently completed and despatched from Paris to the United States this figure of Man o' War, classed as the best thoroughbred produced in America in the last fifty years. It was executed for Mr. W. M. Jeffords, a well-known sportsman of Philadelphia, related to the horse's owner, Mr. Riddle. The original modelled study (illustrated, with the sculptor and the horse, in our issue of june 9, 1934) was made last year at Faraway Farm, Kentucky. Later, in Paris, Mr. Haseltine carved a plaster model, and from it was cast the bronze, which was then chased and plated with gold. Various acid baths eventually gave it a golden-red patina recalling the colour of the horse. The following particulars of Man o' War were given last year: "He is a chestnut, foaled in 1917, by Fair Play out of Mahubah (by Rock Sand). He raced as a two and three-year-old, and ran in twenty-one races, winning twenty and being second in the one he lost. He cost £1000 as a yearling. He won stakes to the value of £49,893."

The forms of Christian festivity are often said to have begun in the old pagan world, and heaven knows they have survived into a new pagan world. But anybody, whether he is a new pagan or an old pagan or even conceivably (for you never know your luck) a Christian, is in fact observing this sort of significant mummery in observing any form of Christmas celebration at all. The professor of ethnological ethics may attribute the tradition of the mistletoe to Baldur or to the Druids. But he must recognise that certain ceremonies were performed under the mistletoe even ceremonies were performed under the mistletoe, even if ethnological ethics have permitted other professors if ethnological ethics have permitted other professors to perform them in many places elsewhere. The musical critic, or student of the stages of harmonic development, may distinguish between the quality of a good ancient carol or a bad modern one. But he knows that, even in this timeless time, it is only somewhere about the beginning of Advent that little boys in the street begin to sing the carols attached to Christmas. Like all little boys, they are in advance of the age; but at least they do not begin to sing Christmas carols on Midsummer Day. In short, wherever anybody observes the Christmas forms at all, they

That is what is meant by saying, as many journalists actually do say, that a civilisation of robots would be more efficient and peaceful. One of the advantages of a robot is the complete absence of his mind.

Thus I will admit anything against old customs, except the idea that they are dead and meaningless. It is the society without customs that becomes dead and meaningless. If the professor says to me frankly: "I do not want to kiss a girl under the mistletoe because it makes me think what I am doing, whereas I can now kiss any number of other girls anywhere without thinking what I am doing," then I think he is an honest fellow, and I can debate with him about the real facts of ethnological ethics. If the little boy in the street says: "I like bawling at any time of the year, and I don't see why I shouldn't bawl all the year round," then I am quite ready to admit that it is the nature of boys to have and that there is is the nature of boys to bawl, and that there is a certain sympathy between us, because I have been a boy myself. But if either of them say that there is less significance in ritual salutes or ritual songs than in the hearty human instinct to kiss anybody or bawl

A STRIKING ARCHITECTURAL NOVELTY AT BEXHILL: THE SOUTH SIDE OF THE DE LA WARR PAVILION—SHOWING THE AUDITORIUM AND STAGE TOWER, AND (IN FOREGROUND) A SITE FOR GARDEN TERRACES TO THE SEA FRONT.



THE MAIN ENTRANCE HALL OF THE NEW DE LA WARR PAVILION AT BEXHILL:
A VIEW FROM WITHIN LOOKING SOUTH TO THE ESPLANADE AND THE SEA,
AND SHOWING THE GRACEFUL CURVE OF THE STAIRCASE.



THE MAIN SOUTH STAIRCASE: AN EASTWARD VIEW SHOWING (IN FOREGROUND)
A CIRCULAR PLATE RECORDING THAT IT WAS LAID BY EARL DE LA WARR, THEN
MAYOR OF BEXHILL, ON MAY 6 LAST (SILVER JUBILEE DAY).

On December 12 the Duke and Duchess of York visited Bexhill, where they were enthusiastically greeted, and opened the De La Warr Pavilion, named after Lord De La Warr, formerly Mayor of the town. In an address of welcome to the Duke and Duchess, the present Mayor, Alderman O. Striedinger, remarked that the pavilion struck a new and original note in buildings of its kind in this country. The Duke in his reply said: "Looking into the future, it appears to me that, owing to man's greater efficiency and to the advent of machinery and other inventions, an increase of leisure is coming, and it will be well to suggest to people how to amuse themselves

"BEXHILL'S ORIGINAL NOTE IN BUILDINGS":

THE DE LA WARR PAVILION OPENED BY THE DUKE AND DUCHESS OF YORK.



AFFORDING SCOPE FOR AN INTELLIGENT USE OF LEISURE, AS WAS ADVOCATED BY THE DUKE OF YORK IN HIS SPEECH: THE LIGHT AND SPACIOUS LIBRARY

AND READING ROOM ON THE FIRST FLOOR OF THE PAVILION.



THE ROYAL VISITORS AT THE NEW PAVILION: THE DUKE AND DUCHESS OF YORK WITH EARL AND COUNTESS DE LA WARR AND THE PRESENT MAYOR OF BEXHILL, ALDERMAN O. STRIEDINGER (CENTRE).

when not at work. This great pavilion will certainly suggest methods for employing leisure." Besides the main hall, where the opening ceremony took place, the pavilion contains a conference hall, reference library and reading room, restaurant, and tea lounge, with spacious balconies and verandahs, all sited to obtain the maximum of sunlight; also a flat roof suitable for sun-bathing and physical training. The restaurant terrace commands wide views of the coast in the direction of Beachy Head. The architects of the building, who were among those presented to the Duke and Duchess, were Messrs. Erich Mendelsohn and Serge Chermayeff, F.R.I.B.A.

POLYNESIAN ROCK-DRAWINGS ON PITCAIRN ISLAND, WHICH IS NOW INHABITED BY DESCRIDANTS OF MUTHNERS OF THE "BOUNTY"—AN EPISODE FORMING THE SUBJECT OF A FORTHCOMING FILM:
A SUCCESSION OF MOTIFS PHOTOGRAPHED BY A RECENT SCIENTIFIC EXPEDITION.



A CLOSER VIEW OF ONE OF THE STRANGE ROCK-DRAWINGS EXECUTED ON PITCAIRN ISLAND BY THE POLYNESIAN POPULATION WHICH FORMERLY LIVED THERE: A DESIGN OF A MAN (EMPHASISED HERE BY WHITEWASH) AND WHAT IS POSSIBLY A WEAPON (LEFT).

Continued.]
Dr. Lavachery visited the sites of the sanctuaries near the shore, but unfortunately had not time enough to go to that inland.

The rock-drawings were shown to the expedition, as they had been to their predecessors, no two sites. They were rather difficult to get at. Il one case it was necessary to descend a cliff over 100 metres high. Holes the width of a naked foot and a few linches deep had been cut at considerable distances apart, offering a way down to those who do not suffer from giddiness. It is probable that this way of access was contrived

by the ancient Polymeians in order to reach a beach good for fishing.

The site near St. Paul's Head is also at the foot of a rock by the sea. It can be reached by means of a narrow ledge at a height of about 30 metres above the waves. Minor difficulties such as these explain why these rock-drawings had not been properly examined before the visit of this expedition.

PITCAIRN ISLAND, WHERE DWELL DESCENDANTS STATUS AND ROCK-DRAWINGS BY VANISHED POLYNESIANS—

Interest in Pitcairn Island, one of the smallest and most remote British possessions, is being revived by a film dealing with the famous mutiny in the " Bounty." which will be first shown in London on December 26. The film is, of course, based on the historical facts, which were, briefly, as follows. The crew of H.M.S. Bounty" mutinied during a cruise in the South Seas in 1780 but their commander, Bligh, a most tyrannical and brutal officer, into an open boat, and turned him adrift with loval members of the crew. Bligh subsequently reached England : while the mutineers sailed to Tabiti in the "Rounty." Some of them remained there. Nine others, considering the position unsafe, sailed away again in the ship, together with the native women they had married in Tahiti. They made Pitcairn Island and settled there. In 1808, when an American vessel touched at the island accidentally, it was found inhabited by a mixed population under the leadership of venerable figure who called himself Alexander Smith, and admitted being one of the "Bounty" mulineers The others it abbears had lost their lives in a native rising. Thus this strange colony was founded and still continues in prosperity and tranquillity. In religion, the islanders are "Seventh Day Adventiste"

THE Belgian school-ship "Mercator" visited Pitcairn Island early this year. On board her was Franco - Belgian scientific expe-

dition which had spent five months on Easter Island. This included Dr. Henri Lavachery, archmologist of the Musées Royaux d'Art et d'Histoire at Brussels, and Dr. Alfred Métraux, ethnographer of the Ethnographical Museum of the Trocadéro, Paris, with Dr. Israel Drapkin, attached to the expedition by the Chilean Covernment.

The members of the expedition spent two days on the island. While his colleagues proceeded with their ethnological and anthropological investigations, Dr. Lavachery made a rapid survey of the archæological monuments and collected some examples of ancient stonework.

Pitcairn Island was inhabited by Polynesians before it gave refuge in 1790 to nine

PITCAIRN ISLAND, WHERE NINE MUTINEERS WITH THEM TAHITIAN WIVES AND SERVANTS:

TRODICAL VEGETATION THAT IS



THE SITE OF ONE OF THE THREE SANCTUARIES WHICH FORMERLY EXISTED ON PITCAIRN.
THE SPOT AT WHICH THE MUTHLATED STATUE ILLUSTRATED HEREWITH ORIGINALLY STOOD—
AT THE TOP OF THE CLIFF OR THE LEFF, ABOVE THE WHITISH ROCK-FACE.

OF THE "BOUNTY" MUTINEERS FROM TAHITI. AKIN TO THOSE OF EASTER ISLAND AND THE MARQUESAS.



ARRIVED IN THE "BOUNTY" IN 1790, BRINGING A VIEW OF ADAMSTOWN OVER THE DENSE CHARACTERISTIC OF PITCAIRN.

of the mutineers of H.M.S. "Bounty." The Polynesians appear to have been settled here for a long period, as the mutineers found on the tiland three sanctuaries of the kind which are to be seen in all the Islands colonised by Polynesians, and rock-drawings which are strikingly like those of the Society and Marquesas Islands. The sanctuaries as described

by some of the living Islanders, after accounts by eye-witnesses, seem to have been like those called ahu on Easter Island. They appear to have consisted of a mound of earth of about 12 ft. in One side was vertical and faced the sea; the other had a gradual slope and faced the land. At the top of the mound, which was flat, there were statues. There were probably two at the sanctuary above Bounty Bay, and one at the North-Western Sanctuary. There were none at the sanctuary in the centre of the island. The statues faced the front of the sanctuary, where the ceremonies were held, and consequently had their backs to the sea. The dead were buried in, or near these sanctuaries Tradition tells of patches of ground full of human bones. It is in the vicinity of these that the Pitcairn Islanders said they found the axes and the stone adzes, of which they sold about twenty to the expedition. There is nothing left now on

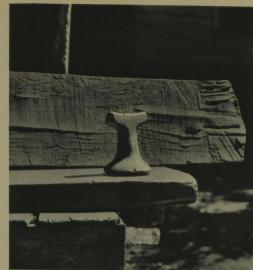
the site of these sanctuaries. With the site of these sanctuaries. With the to religious scruples, must be fairly recent. One of the inhabitants,

aged about sixty, sald he had helped in the destruction of the sanctuary by the landing-place in Bounty Bay. The same man was the owner of the last mutilated statue on Pitciarin, which came from this sanctuary, and was used to support his house. With great difficulty he was prevailed upon to allow it to be photographed. It is greatly to be repretted that the face has been totally destroyed.

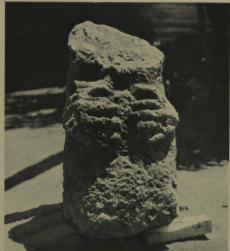
It is made of volcanic tuía, yellowish and fairly hard. It is 76 cm. high, 34 cm. wide, and 30 cm. thick below the hands. The posture of the hands, open on either side of the navel, is identical with that of most Eastern Polynesian statues from Easter Island to the Marquessa Islands, but the work is much rougher. [Consisted below on light]



THE HOUSE WHERE THE LAST RELIC OF THE STATUES WHICH ONCE STOOD ON PITCAIRN ISLAND (ILLUSTRATED HEREWITH) WAS FOUND, USED AS A SUPPORT: THE RESIDENCE OF MR. NORRIS YOUNG, WHO REMEMBERED HEPING TO DISMANILE A SANCUARY.



A PITCAIRN ISLAND RELIC OF GREAT INTEREST PHOTOGRAPHED BY THE SCIENTIFIC EXPEDITION WHICH TOUCHED THERE IN THE "MERCATOR": A TAINTIAN PESTLE BROUGHT TO PITCAIRN BY ONE OF THE OWNES OF THE ORIGINAL MOTHERES.



THE LAST RELIC OF THE STATUES WHICH FORMERLY STOOD IN THE SANCTUARIES OF PITCAIRN ISLAND: A RUDELY CARVED WORK OF FOLYMESIAN TYPE, OF WHICH LITTLE MORE THAN THE HANDS, PLACED EITHER SIDE OF THE NAVEL, REMAIN.

Continued.]

The subjects represented are creatures of human aspect, a dog (?), birds, one of which is a hen, circles with rays, straight lines, and what is perhaps a representation of a boat with nest. These latter resemble rock-drawings at Easter laind, which undoubt-edly represented native vessels. The other drawings are geometrical in character, very different from those of Easter Island, and are reminiscent of the rock-drawings of the Society Islands. Not counting about twenty pieces of stonework generally speaking interior in quality to the pieces of the same origin shown at the British Museum, Dr. Lawachery saw one interesting object. It was a basally peatife of the middlingman of It was the property of Miss Beatries Young great-grand-daughter of the middlingman of It was the property of Miss Beatries Young great-grand-daughter of the middlingman of doubt it was one of the houst-deeping observable to repetit to the Island by the Tahitias wife, who accommodated Young to Breathy.

TWO HUNDRED FALSE KILLERS HURL THEMSELVES ASHORE:

A MYSTERIOUS STRANDING NEAR THE CAPE, WHICH IS PARALLELED BY CASES OF FALSE KILLERS RECENTLY STRANDED ON THE EAST COAST OF ENGLAND.

By CAREL BIRKBY. (See also Photographs on Opposite Page.)

We give here a most interesting description of the big school of False Killer Whales which flung itself ashore near the Cape of Good Hope. An authority at the Natural History Museum made the following comments on the photographs reproduced on this page and that opposite: "The photographs are very interesting indeed. Until a year or two ago the stranding of False Killers would certainly have been regarded as of exceptional interest, but of late they have gone ashore so frequently that they do not cause any great excitement. In the last three weeks there have been about eleven records of stranding on our East Coast, involving some sixty False Killers."

Scientists have so far failed to solve the mystery of the apparent "suicide" of False Killer Whales on the South African coast. At high tide on Nov. 19 a school of about 200 of these whales, more properly termed Pseudorca Crassidens, hurled themselves ashore at Grotto and Sea Spray, lonely coves on the rocky coast of Darling district, Cape Province. They were stranded high on the rocks, lacerated and battered. The retreating tide was red with their blood. Those that did not die almost immediately from their injuries gasped out their lives beneath the hot African sun. When I visited the scene two days later one whale still lived, breathing stertorously and gasping as painfully as a human being suffering from pneumonia. Occasionally it emitted a pathetic cry rather like that of a seagull.

Scientists in South Africa, it seems, cannot provide an answer to the riddle as to why these false killer whales hurl themselves to death on the shore. Elsewhere, too, men of knowledge cannot explain the stranding of the killer whale. What makes their shoreward dash-to-death the more mysterious is that until twelve years ago the occurrence was unknown, and indeed, the false killer was accounted a rare specimen. Since then, however, there have been several cases. One stranding occurred on a beach at Zanzibar. Others occurred on a beach on the Scottish coast in 1927. Until recently, the Cape was the only part of the world where the false killers had twice stranded themselves. In December 1928 a school numbering 108 threw themselves on to the soft sand beach of Kommetjie, near Simon's Town, in the Cape Peninsula.

Now has come the Darling stranding, which is believed to involve more whales than any previous stranding. It is notable, too, that in contrast to the fact that all previous strandings occurred on beaches, for the first time the whales here hurled themselves on to jagged rocks. I put the problem

of the whales' "suicide" to Dr. Cecil van Bonde, Director of Fisheries Survey of the Union of South Africa Government; to Dr. Leonard Gill, Director of the South African Museum; and to Mr. G. W. Rayner, who is acting as marine biologist aboard the whaling research ship, William Scoresby, which, while on its way to the Antarctic, put into

which, while on its way to the Antarctic, put into Table Bay at the time of the stranding. None of them could advance an answer.

Did the whales not perceive the danger of the shore? The evidence of local fishermen negatives

this. They report that the school charged at the shore "like a flotilla of destroyers," and when about to beach themselves turned swiftly and made out to sea again; ten minutes later they returned, and this time did not turn back. the whales pursued by some submarine enemy? The fishermen saw no signs of attackers, such as sword-fish, that might have driven them ashore in fear, nor were there any wounds on the carcases that might not have been caused by rocks. Did they all follow their leader blindly on to the land? This is negatived by the fact that isolated whales, well away from the general body of the school, also tried to throw themselves on to the rocks. Would these false killers, for some strange reason, make for the land in order to calve? A curious discovery made by Mr. Rayner, the marine biologist, was that most of the cows had calved a very short time before death. But no new-born calves were discovered among the rocks, so were probably born definitely before the stranding.

One clue to the mystery may be that the whales flung themselves ashore in a frenzy of agony. When the 108 whales were stranded at Kommetjie seven years ago, coloured fishermen noticed that they had been swimming around the coast for some time beforehand, and that the water was extremely discoloured

through sand that had been stirred up by a furious "south-easter"—the fierce wind for which the Cape in famous. Now, a furious "south-easter" was blowing again when the school was stranded on the Darling coast—a "south-easter," indeed, which afterwards rose to the unprecedented gust-velocity (for the Cape) of 102 miles an hour. This coincidence prompts some naturalists to advance the theory that the whales' membranes were so irritated by sand, taken in through mouth or blow-hole, that the mammals were maddened sufficiently to commit suicide.

Mr. Rayner spent two days at the scene of the stranding. He dissected eighteen cows in the hope of finding a fœtus. He was investigating a theory that the skull of the fœtus differs in several respects



SCIENTIFIC EXAMINATION OF ONE OF THE STRANDED FALSE KILLER WHALES: MR. W. G. RAYNER (LEFT), OF THE ROYAL RESEARCH SHIP "WILLIAM SCORESBY," AND MR. REAY SMITHERS REMOVING A SMALL WHALE FOR DISSECTION.

from that of the fully-developed mammal. It has even been suggested that these differences, if they could be established, might give evidence of the distant times when, it is assumed, whales dwelt on land. But Mr. Rayner was not able to discover even one fœtus. Every whale that had been pregnant had calved.

One specimen was removed by motor-car-a difficult task in view of the rough and almost inaccessible nature of the country-and has been salted down for shipment aboard the William Scoresby. After the Antarctic voyage it will be taken to England, and will very probably be handed over to the British Museum. Two other specimens were also loaded into the car for the South African Museum. singular fact discovered by scientists was that the stomachs of all the whales were empty. In only one, indeed, was there any trace of food. So evidently the school did not dash ashore in pursuit of a school of cuttle-fish or squid, their staple diet. Still, there was no sign of starvation, and it seems out of the question that

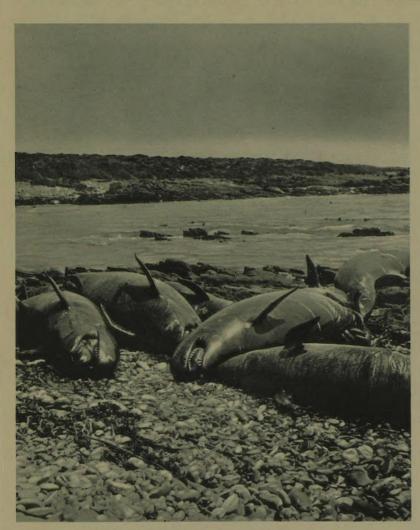
hunger caused their leap to the shore.

The presence of the whales on the Darling coast has not caused such a great problem for the local health authorities as the Kommetjie stranding, when scores of men were employed to saw up and bury the carcases to abate the nuisance caused by decomposition. The Darling coast is uninhabited, and so the rotting whales will not offend anybody. The few fishermen at the coves have moved inland. It was expected that the coloured people of the district would eat the flesh of the whales (which they call "walvis"), but superstition has deterred them from touching these beasts that emerged so strangely from the South Atlantic,

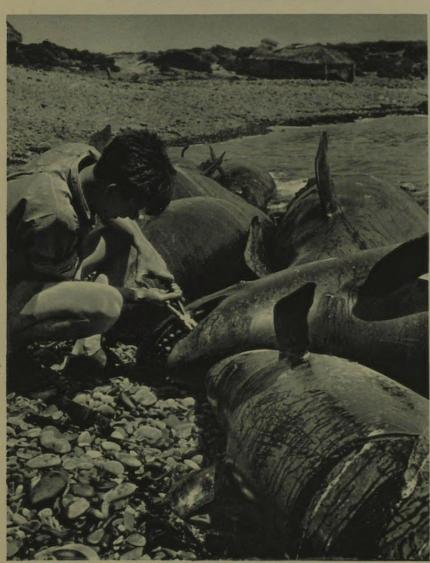


THE MYSTERIOUS STRANDING OF A LARGE SCHOOL OF FALSE KILLER WHALES, WHICH HURLED THEMSELVES ASHORE ON THE COAST NORTH-WEST OF CAPE TOWN: ONE OF THE STRANDED WHALES BEING EXAMINED BY MR. LAWRENCE G. GREEN, AUTHOR OF "GREAT AFRICAN MYSTERIES"; WITH THE WIVES OF HOTTENTOT FISHERMEN IN THE BACKGROUND.

FALSE KILLERS ASHORE NEAR THE CAPE-RECALLING EAST-COAST STRANDINGS.

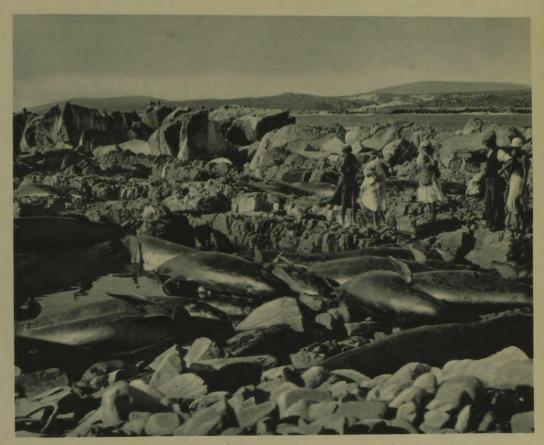


THE MYSTERIOUS CASE OF THE SCHOOL OF TWO HUNDRED FALSE KILLER WHALES WHICH FLUNG THEMSELVES ASHORE ON THE DARLING COAST, NORTH-WEST OF CAPE TOWN: SOME OF THE STRANDED ANIMALS.

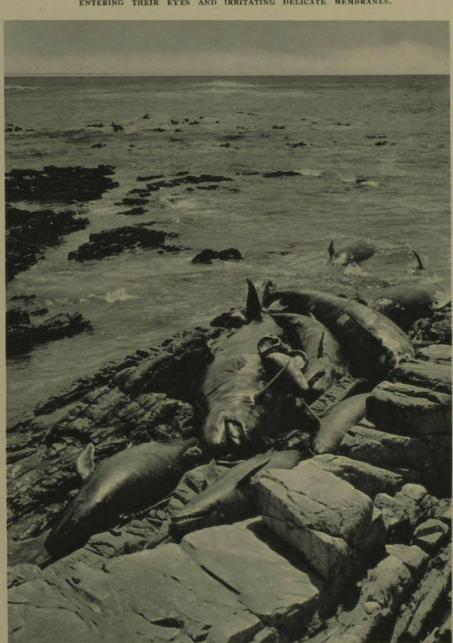


SCIENTIFIC EXAMINATION OF THE STRANDED WHALES: MR. REAY SMITHERS, ACTING FOR THE SOUTH AFRICAN MUSEUM, EXTRACTING TEETH.

At high tide on November 19 a school of about two hundred False Killer Whales (Pseudorca) hurled themselves ashore at points on the rocky coast of Darling District, in Cape Province. This case of apparent self-extermination is parallelled by false killers that have recently gone ashore on the coast of Scotland and the East Coast of England. One remarkable fact about the Darling stranding was that no unborn calves were found, although there were discovered a number of females that had had calves just before death. An authority at the Natural History Museum, whose

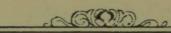


ANOTHER GROUP OF FALSE KILLERS STRANDED ON THE SOUTH ATLANTIC SHORE OF SOUTH AFRICA: ANIMALS THAT WERE, PERHAPS, MADDENED BY SAND (STIRRED UP IN THE WATER BY A GALE) ENTERING THEIR EYES AND IRRITATING DELICATE MEMBRANES.



ANOTHER SINGULAR FEATURE OF THE STRANDING: A PHOTOGRAPH OF A SPOT WHERE THE WHALES HAD CHARGED JAGGED ROCKS, RECEIVING CRUEL WOUNDS.

comments are quoted as a preface to the article on the opposite page, points out that in the case of some false killers recently stranded on the Lincoln coast, two unborn calves were found. With regard to the suggestion that the Darling stranding may have been due to sand, stirred up in the water by a gale, irritating the whales' membranes, the same authority observes that a similar explanation could not account for strandings on the East Coast of Great Britain. He suggests that these strandings are associated with a greater amount of Atlantic water in the North Sea than usual.





THE





ANIMALS AND PERFUMES.

By W. P. PYCRAFT, F.Z.S., Author of "Camouflage in Nature," "The Courtship of Animals," "Random Gleanings from Nature's Fields," etc.

ALL who have attained to the rank of "grown-ups"

All who have attained to the rank of "grown-ups" are expected to give presents at Christmas time; but our pleasure in giving is not seldom tinged with anxiety as to whether our gift will give the pleasure we intended. The vendors of Christmas presents endeavour to help us by subtle suggestions—"Say it with flowers," or "Say it with scent." Now, this last suggestion appeals to me, for I have always been interested in "scents."

To those who have the good fortune to find a bottle of scent among their Christmas presents this year, it will probably be just "scent"—a delicious aroma, arousing, however, no curiosity as to the sources from which it has been distilled. Most scent-lovers, indeed, if they did give the matter a thought, would suppose that the flowers supplied the raw material. This, however, is only parlly true, for some, to-day, are extracted by the scientific chemist from coal-tar. Others from animals which use them, not for the enjoyment of their fragrance, but as lures to find mates. On this aspect of scent, however, I can say little here, because I am concerned now with the more important of the scent-producers which provide the perfumier with his raw material.

Before, however, I take up this part of my theme, a few words must be said as touching this use of scent as a lure among the "hower orders of Creation." The vapourer-moth, for example, finds his wingless mate solely by the scent she exhales. What this is like no man knows, for it is imperceptible to human nostrils; yet an empty box, in which a female has been confined for a few hours, if placed directly after her removal on the window-sill, will still attract crowds of males endeavouring to find her. The scent of a human foot can be traced by its owner's dog readily, yet what that scent is like we do not know.

And now let me turn to the uses which the perfumier makes of these mate-finding lures, distilled by some of the mammals. There are several races of musk-deer, distributed over the Himalayas, Tibet, and China, but always at high altitud

The scent-glands of the civet-cat, and nearly related cies, in like manner furnish material for blending

purposes. In England, in the sixteenth and seventeenth centuries, caged civets ensured a constant supply. To-day, the chief source is the African civet-cat. The scent-glands of this animal pour their secretions into a pair of pouches near the tail, forming an unctuous, brownish substance,



THE SOURCE OF MUSK: MUSK-DEER, A SPECIES IN WHICH
THE MALE HAS A SCENT-GLAND
FILLED WITH A SUBSTANCE
DIFFUSING THIS SCENT IN GREAT
STRENGTH.

The musk-deer is an aberrant member of The musk-deer is an aberrant member of the deer tribe, about the size of our roe-deer. It develops no antlers, but, instead, has a formidable pair of long, slender, sharp tusks. The substance in this deer's scent-gland has to be diluted and blended by the perfumier before it can be used as scent.

which is removed by means of a long wooden spatula. Unpleasant in appear-ance and disagreeable ance and disagreeable in smell, an essence is prepared from it which, when diluted, has a "pleasant aroma," used by perfumiers for "blending" purposes. It Shakespeare, in "Much Ado About Nothing," makes Pedro say:

Nay, he rubs himself with civet; Can you smell him out by that?

Cowper, again, says:

I cannot talk with civet in the room, A fine puss-gentleman that's all perfume

I cannot talk with civet in the room,
A fine puss-gentleman that's all perfume.

I suspect this odour must have been that of musk, from the fact that one authority remarks: "It is much to be preferred to musk, because the scent is finer." Are we to interpret this as meaning that the "musk" referred to is that of the musk-deer, while that obtained by blending from the civet scent-glands is of a more subtle quality? Perhaps some of my readers can enlighten me.

The smell of musk, it is worth notice, is surprisingly wide in its occurrence in the animal kingdom. There is our "musk-beetle," then there are "musk-turtles," and crocodiles which diffuse a powerful odour of musk. Then we have the "musk-duck," "musk-rat," and the South American pig, or "collared peccary," while there are a number of creatures, from fish to ruminants, whose flesh has an unpleasant musky odour at certain times of the year, though its source eludes detection. And then, of course, there are flowers which exhale the scent of musk. Some will remember the delicate fragrance of the musk-plant which used to hang in cottage windows half a century ago. Suddenly, and precisely when no one knows, it disappeared, and I believe the plant is now as dead as the dodo. The cause of its disappearance is still a mystery. But, be this as it may, so far as I know, no musk obtained from plants is used in perfumery.

Castoreum, a substance obtained from the scent-glands of both the male and female beaver, is, as with the civet, used as a "fixative" in blending scents of various kinds. Its chief constituent is of a whitish, or yellowish creamy substance, the chemical nature of which has not yet been fully analysed. It is not merely used as a "fixative" in perfumery, but also in medicine.



2. THE SOURCE OF "CIVET," A PERFUME HIGHLY VALUED IN THE SIXTEENTH AND SEVENTEENTH CENTURIES: THE AFRICAN CIVET (VIVERRA CIVETTA).

Formerly, civets were kept in cages in this country to ensure a constant supply of the perfume. The contents of the scent-glands were removed once or twice a week with a wooden spatula. But the demand now seems to have ceased.—[Photograph by F. W. Bond.]

3. THE SOURCE OF "CASTOREUM," A SUBSTANCE USED BY THE PERFUMIER AS A FIXATIVE IN BLENDING SCENTS OF VARIOUS KINDS: THE BEAVER (CASTOR FIBER), OF WHICH BOTH THE MALE AND FEMALE BEAR SCENT-GLANDS.—[Photograph by D. Sath-Smith.]

would be difficult, they tell us, to imitate the aroma of some flowers without it. Hence, then, it is capable then, it is capable of producing scents of varied odours. But here is a tiresome omission in their description. Of what nature is the 'pleasant aroma' of the "diluted essence"? Again, I find it impossiessence"? Again, I find it impossi-ble to be certain as to the nature as to the nature
of the scent known
as "civet," so
much in esteem
during the sixteenth and seventeenth centuries.

Finally, mention must be made of ambergris, which is taken in large masses from the intestines of the spermwhale, and is also found floating in the seas haunted by this animal. It is generally regarded as a pathological product, formed of the indigestible beaks of the cuttlefish on which it feeds. It may be pathological, but the specimens I have examined had an almost wax-like character, and an indescribable and rather pleasant odour. When carefully examined, it is found to be made up of comminuted fragments of cuttlefish beaks, and of their gritty "pens." Here and there shiny patches of resinous-looking material are seen. The raw material is the most valuable of all animal perfumes, fetching as much as 90s. an ounce. When dissolved in alcohol it is used not merely as a "fixative," but to intensify the aroma of whatever scent is compounded of it, a very small quantity sufficing for this purpose.

But I am mystified by a statement I have seen asserting that ambergris in its solid state diffuses the most lasting perfume known, clinging to woven fabrics, even after they have been washed, and the longer it lasts, the sweeter becomes its odour. A solid lump of ambergris was under my charge at the British Museum of Natural History for many years. I often handled it, and though it always gave out the same odour, this was very slight. It was a pleasing scent, unlike any other known to me.

THE WORLD'S THIRD LARGEST SPAN ON A REMOTE RHODESIAN RIVER.



I. APRIL 1934: THE SITE OF THE BIRCHENOUGH BRIDGE, A LONELY SPOT ON THE SARI RIVER, BEFORE WORK WAS BEGUN.



2. NOVEMBER 1934: SKEWBACKS AND BEARINGS COMPLETED, A RAMP IS MADE ON WHICH THE CRANE WILL REACH THE ARCH.



3. NOVEMBER 1934: A BLONDIN MAST AND TRAVELLER TO CONVEY MATERIAL.



4. DECEMBER 1934: THE ERECTION OF STEEL-WORK BEGUN ON THE EAST BANK.



5. JAN. 1935 : SKEWBACKS AND BEARINGS ;



6. JAN, 1935: THE FIRST PANEL COM-



7. JANUARY 22, 1935: DRIVING THE FIRST RIVET; SHOWING THE GIRDERS OF MESSRS. DORMAN LONG'S SPECIAL "CHROMADOR" HIGH-TENSION STEEL.

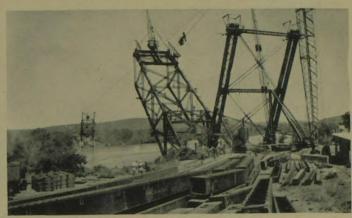


A. A GENERAL VIEW OF THE ROADWAY SUSPENDED EELOW THE ARCH, WHILE UNDER CONSTRUCTION.

SIR HERBERT STANLEY.
the Governor of Southern Rhodesia, arranged to open the Birchenough Bridge over the Sabi River on December 20. bridge is named after Sir Henry Birchenough, Bart., the Chairman of the Beit Trust Fund, which has given it to the people of Southern Rhodesia. It is a remarkable fact that, while the world's greatest single-span bridges - that at Sydney Harbour and that at Bayonne, New York-were built to serve the teeming populations of long-established capitals, their new "rival" in Southern Rhodesia rises in a sparsely inhabited region, in what may be called "new country," nearly a hundred miles from any town. But, unquestionably, the eastern district of Melsetter and the Sabi River valley, which the bridge links with the centre of Southern Rhodesia, have a great future before them. Known as the "garden of Rhodesia," they enjoy such a variety of climate that almost every kind of fruit, flower, and vegetable can be grown there. The Birchenough Bridge was designed by Mr. Ralph Freeman who planned the Sydney Harbour Bridge; and the work has been carried out by Messrs. Dorman, Long and Co. The bridge is built of their "Chromador" steel, which is stronger by 50 per cent. than the mild steel generally used for bridge-work and 20 per cent. stronger than that used for the Sydney Harbour Bridge. Its use has enabled the construction to be carried out for the moderate sum of £130,000. The intense variations of temperature in the Sabi River valley (tropical heat at midday and sometimes bitter cold at night) were one of the great difficulties that faced the builders. The halves of the great arch expanded no fewer than five inches on each side in the noonday heat, and the work of joining up the arch in the middle had to be done in the cool of the early morning. In spite of this, and the fact that special lorries had to be constructed to bring the great lengths of steel-work from a distant rail-head, the bridge was completed in twenty months. Apart from the bridge's commercial importance, the rapidly increasing tourist traffic in Rhodesia will certainly converge on it. It opens up a circular route on which the motorist will be able to pass in a few hours from the ruins of Zimbabwe to the cool

mountains and green groves of Melsetter.

HOW THE BIG BIRCHENOUGH BRIDGE OVER THE SABI WAS CONSTRUCTED.



9. FEBRUARY 1935: THE STUMPS OF THE ARCHES SPRINGING FROM EITHER BANK, SUPPORTING THE CRANES.



10. APRIL 1935: THE STATE OF THE WESTERN HALF-ARCH; THE CRANE; AND MATERIAL BEING TRANSPORTED ACROSS THE SABI RIVER.



11. JUNE 1935: THE HALF-ARCHES NOW ANCHORED BACK BY THE WIRE ROPES PREVIOUSLY USED ON THE SYDNEY HARBOUR BRIDGE.



12. JULY 1935: THE ARCH COMPLETED; A TASK COMPLICATED BY THE EXPANSION OF THE METAL-WORK UNDER THE INTENSE SUNSHINE.

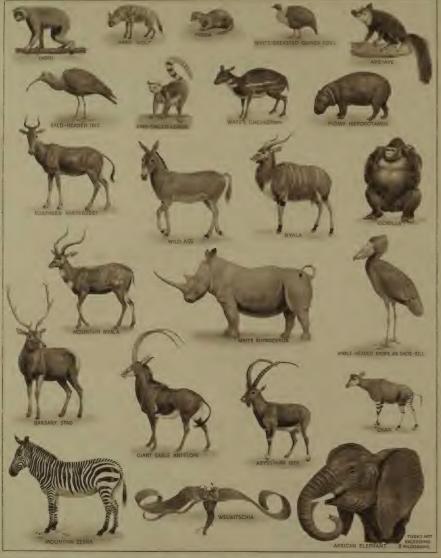


13. COMPLETED: THE BIRCHENOUGH BRIDGE, A SINGLE SPAN OF 1080 FT.—THE THIRD LONGEST IN THE WORLD—RISING TO 280 FT.

ABOVE THE RIVER.

1128

AFRICAN FAUNA AND FLORA HENCEFORTH TO BE COMPLETELY PROTECTED.



ANIMALS PUT IN CLASS A. BY THE INTERNATIONAL CONFERENCE FOR THE PROTECTION OF THE FAUNA AND FLORA OF AFRICA:

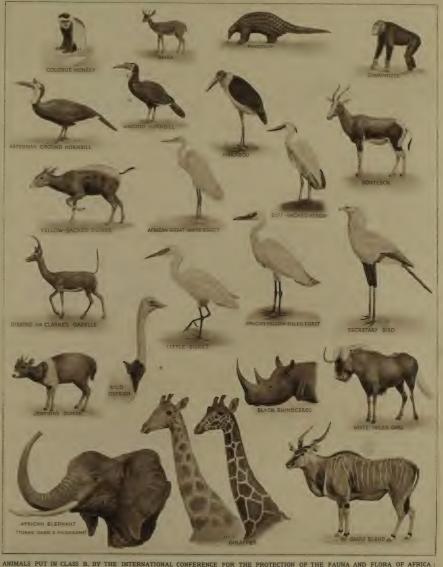
CREATURES WHICH IT WILL BE ILLEGAL TO HUNT, KILL OR CAPTURE EXCEPT IN VERY SPECIAL CIRCUMSTANCES.

On January 14 the articles of the Convention for the Protection of the Fauna and Flora of Africa, which was signed in London by the delegates of nine of the Fauna and Flora of Africa, which was signed in London by the delegates of nine of the control of the con

Madagasses), will not delay ratification for long. The main achievement of the Conference was the drawing up of two lists called Class A. and Class Bt—the first consisting of animals plots, and a plant to be protected as completely as possible against the threat of extinction; the second consisting of animals and possible against the threat of extinction; the second consisting of animals and are not to be hunted, killed or captured, even by natives, creept under a special licence granted by the competent authorities. On this page we show the creatures included in Class A.; opposite are those in Class B.

Illustrations from a Special Publication of the American Committee for International Wild Life Protection, of

AFRICAN ANIMALS AND BIRDS HENCEFORTH TO BE PARTIALLY PROTECTED.



ANIMALS PUT IN CLASS B. BY THE INTERNATIONAL CONFERENCE FOR THE PROTECTION OF THE FAUNA AND FLORA OF AFRICA:

CREATURES WHICH IT WILL BE ILLEGAL TO HUNT, KILL OR CAPTURE EXCEPT UNDER SPECIAL LICENCE.

It will be noticed that the elephant is included both in Class A, and Class B, by the international Conference for the Protection of the Fauna and Flors of Africa Only elephants with tusks which do not exceed five kilogrammes in weight are scheduled for rigorous protection; those with heavier tusks are included in Class B. The distinction is that animals in Class A. may be hunted, killed or captured only by special permission of the highest authority in the territory, which shall be given only in special circumstances, solely to further important scientific purposes, oven essential for the administration of the territory. Animals in

Class B. may not be hunted, killed or captured, even by natives, except under special licence granted by the competent authorities. For this purpose a special licence denotes a licence other than an ordinary game licence, granted at the discretion of the competent authority, and giving permission to hunt, kill or capture one or more specimens of a specified animal or animals. Every such licence is to be limited as regards the period and the area within which hunted, killing or capturing may take place. It will be seen that very real restrictions are imposed on the destruction of both classes of animals.

Cambridge, Massachusetts. The Publication Kindly Lent by the Society for the Preservation of the Fauna of the Empire.

AN ALADDIN'S CAVE SUBTERRANEAN WONDERS:

THE SOLUTION OF AN AGE-OLD MYSTERY AT THE FOOT OF A GIANT PRECIPICE IN MORAVIA: A VAST SYSTEM OF CAVERNS AND UNDERGROUND STREAMS EXPLORED AND MADE ACCESSIBLE TO THE PUBLIC AT MACOCHA.

By DR. KARL ABSOLON, Professor of Geography in the University of Prague; Curator of the Moravian Government Museum at Brno; and Chief Discoverer of the Moravian Caves. (See Illustrations on Four Succeeding Pages.)

ACOCHA is one of the greatest natural wonders of the world. Its gigantic proportions and its marvellous subterranean wonderland make it a well-known phenomenon to all living in central Europe. Thousands of people make annual pilgrimages to Macocha, yet in other lands it is still unknown. After two centuries of vain endeavour to solve the riddle of Macocha, and a life's work of exploration on my part, its great mystery was finally explained. The Moravian caves (Karst) lie between Prague and Vienna near the Moravian capital, Brno (Brünn, the Moravian "Manchester"). This part of Moravia is known to readers of The Illustrated London News, which in 1925, 1929, and 1930 published long articles by Sir Arthur Keith, Professor Miles Burkitt (of Cambridge) and myself on the legendary settlements of diluvial hunters of mammoths and cave bears.

The region in question is about 100 sq. kms. in extent,

of diluvial hunters of manimoths and cave bears.

The region in question is about 100 sq. kms. in extent, and contains innumerable caves, many precipices, strange subsidences, and hidden streams flowing below ground. The largest subsidence is at Sloup to the north-west and at Holstýn to the north-east. The largest precipice is Macocha and the biggest stream is called Punkva, which means "disappearing." Probably all these small underground streams converge at Macocha at the foot of the precipice and appear as the River Punkva—but no one has yet proved it.

In 1747, the Emperor Franz, husband of Maria Theresa.

Macocha and the biggest stream is called Punkva, which means "disappearing." Probably all these small underground streams converge at Macocha at the foot of the precipice and appear as the River Punkva—but no one has yet proved it.

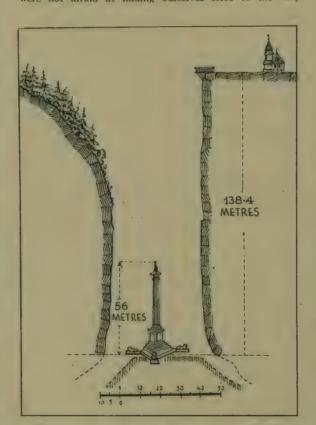
In 1747, the Emperor Franz, husband of Maria Theresa of Austria, sent his Court mathematician, Johannes Nagel, to Moravia to explore the caves of Sloup, and we owe to Nagel the carlier "method" of exploring subterranean pools. He took a goose, fixed a piece of wood with a lighted candle on its tail, and drove it hissing into the darkness. Thus he describes his work in his report to the Emperor. Progress during the last 200 years can be gauged by contrasting Nagel's goose with our centrifugal pumps, diving apparatus, and pneumatic boats. For me the caves of Sloup were the school in which, from 1896 to 1908, I gathered the knowledge necessary for examining the Moravian Karst.

Macocha is not a black pit, whose bottom is indiscernible, but a gigantic chasm opening out into a densely wooded plain that we cannot see until we stand on the very edge. The precipice is nearly 300 metres long, by 126 metres wide and 138'4 metres deep. Its dimensions may best be imagined by comparing it with Nelson's Monument in Trafalgar Square, which I admire so much when I come to London. It is impossible to climb down Macocha, because it is shaped like an hour-glass—that is, the precipice walls converge towards the middle and widen out again towards the bottom. Many tourists who have attempted to descend without a rope have lost their lives. Macocha's reputation is a gloomy one, for courtless suicides have ended their days by jumping over this dread precipice. The name Macocha originated in trees, and its cries attracted several miners who were working in the forest. They saved the child, and hurled the wicked stepmother into the abyss. It was considered a piece of daring even to look down the precipic, let alone descend it.

In 1748 a labourer employed by Nagel was the first to descend, Later, two Engishm

We had noticed that 18 metres above the surface of the lower pool were openings through which was felt a powerful draught of air. I concluded that these holes must be connected with the cave, and therefore it must be the walls of a lagoon above the emergence of the river Punkva. I was overwhelmed with joy when, acting on this assumption, I actually found, at this same height above We had noticed that

tion, I actually found, at this same height above the emergence of the Punkva, a long row of similar openings through which blew a strong current of air (in speleological language, "ventilators"). This draught changed direction according to the season. Sometimes it swept inwards and sometimes outwards, so obviously a free connection existed between the two series of holes. Events followed quickly, and more was achieved in one quarter of an hour than had been done before in a hundred years. The strongest draught came from a hole only 30 cm. high and 20 cm. wide. This hole we enlarged until two of the smallest of us could creep inside. Below us we encountered a fall of 5 metres and immediately an ascent, and then we had to crawl 30 metres further on our stomachs. Suddenly we stood overwhelmed by the sight of a huge cavern filled with stalactites and stalagmites. We were not afraid at finding ourselves close to the very



THE HEIGHT OF THE MACOCHA PRECIPICE-138'4 METRES (ABOUT 452 FT.)—COMPARED WITH THAT OF NELSON'S MONUMENT (184 FT. 11 IN., INCLUDING PEDESTAL AND STATUE): A DIAGRAM OF THE ABYSS AT THE BASE OF WHICH THE EXPLORATIONS BEGAN

edge of another precipice running sheer down into water. Disregarding everything in our enthusiasm, we hurried forward in a fever of anticipation. We crept round the left side of the precipice and, pressing on along an ancient river-bed covered with flints, made our way in the direction of Macocha. The historic moment had arrived and, for the first time, the Moravian Karst was explored. For the first time was seen the gigantic interior of the area surrounding Macocha. We realised that these were no narrow, diluvial clefts, but something never dreamt of by the last generation. What we saw were enormous open caves. We explored the "Palæo-Punkva," the old river bed in which the Punkva flowed in the diluvial age. After further exploration we gained an easy entrance through magical caverns to the foot of Macocha. Nowadays this same route to the floor of Macocha is lighted by electricity.

by electricity.

About the same time I and my fellow-workers managed to enter this limestone mass from another point about one kilometre further south, in the so-called "dry ditch" of the Catherine Cave, long known as the home of diluvial man. Following similar "ventilators," we quickly made our way to a depth of 300 metres into a chamber where we found the monumental "Stalagmite Forest" with



THE MORAVIAN EXPLORERS WHO OPENED UP THE SUBTERRANEAN WONDERS OF MACOCHA: (LEFT TO RIGHT) MR. V. ONDROUSEK, ELECTRICAL ENGINEER; MR. T. K. DIVISEK, SPORTSMAN AND DIVER; DR. K. ABSOLON, LEADER AND CARTOGRAPHER (AUTHOR OF THE PRESENT ARTICLE); AND MR. V. BRANDSTATTER, MECHANICAL ENGINEER.

the famous stalactite in the form of the "Stooping Witch." The Catherine Caves, which are part of the "Palæo-Punkva" river-bed, are now well illuminated with electric light.

river-bed, are now well illuminated with electric light.

On April 17, 1917, the villages of Sloup and Holštýn were flooded by heavy rains, and a tremendous volume of water filled the cavern called "Rasovna." In two or three hours this flood completely submerged the floor of the cavern, and rapidly disappeared through an unknown river-bed of the Punkva. To describe the violence and terrific roar of the flooded Macocha is almost impossible. of water filled the cavern called "Rasovna." In two or three hours this flood completely submerged the floor of the cavern, and rapidly disappeared through an unknown river-bed of the Punkva. To describe the violence and terrific roar of the flooded Macocha is almost impossible. Wave on wave broke from the mouth of the Punkva. The very walls seemed to shake and quiver. The river reached a height of 14 metres above normal. But, strangely enough, this great volume of water found some unknown way out on to the other side of the precipice. The fact that this great volume of water could find such a rapid way out through the ground proved that there must exist not only narrow passages, but also a wide river-bed running through empty caverns. So I returned in 1920 to the cave where the Punkva River emerges, and once more began to investigate. The Minister for War at that time, Mr. Václav Klofači, provided me with a squad of soldiers to blow up the ceilings of the cavities. In a few days we had explored long caverns of stalactites and stalagmites. Our assumption regarding the floods was correct. Moreover, we discovered a passage leading in a quite new direction. Following this we came to a cupola with still finer and more varied stalactites and stalagmites. Thousands of these transparent stalactities and stalagmites shed their dazzling light in this cave, which we named after our great President, T. G. Masaryk. I was able to regain the foot of Macocha from another side by a water route only 250 metres long; yet to attain this short distance we had been labouring hard for twelve years. The reason for our past difficulties had been that the Punkva River became deeper and deeper inside this very low cave, until we finally stood before a cavity 15 metres wide by 20 metres long and 22 metres deep, the walls direpping sheer into the water. It was one of the most dangerous cavities we had seen. For five years we had tried to overcome the difficulty of this hole in vain. We were completely at a loss. We decided that we must em

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THE MIGHTY CHASM OF MACOCHA, WHERE IMMENSE CAVES WERE DISCOVERED CONTAINING A SUBTERRANEAN RIVER.

ARTICLE BY DR. KARL ABSOLON (CONTINUED FROM OPPOSITE PAGE)



THE GREAT MACOCHA PRECIPICE (452 FEET HIGH), WHICH THE EXPLORERS DESCENDED BY ROPE-LADDER FOR THEIR ADVENTURES IN THE DEPTHS OF THE ABYSS: A VIEW FROM THE SOUTH SIDE, SHOWING AN OBSERVATION PLATFORM PROJECTING OVER THE BRINK.

Continued from opposite page.] through the holes. So it was an exciting moment when we pressed the switch. We heard a loud explosion and breathlessly watched the river. Hurrah! The river at the tunnel suddenly slowed down; then it completely stopped and the frightened fish rushed back. Look! The waters suddenly turn back into the rocks! Punkva now flowed in the opposite direction, the direction we wanted it to take for the present. A flow of dirty, yellow water then came through the tunnel and the water around Macocha sank 5½ metres lower. At a distance of 25 metres lower down, the tunnel was then closed by a huge "Stoney" dam, built by the Czechoslovakian firm Breitfeld-Daněk, under the direction of Dr. Karásek. The river returned to its former river-bed and so we could regulate the flow of water at will. After the very hot and dry summer of 1932 I thought the right moment for



THE OUTLET FROM WHICH THE UNDERGROUND RIVER PUNKVA EMERGES: A VIEW FROM INSIDE A CAVERN, LOOKING TOWARDS THE VALLEY OUTSIDE—THE FIGURES OF TWO MEN INDICATING SIZE.



THE STARTING-POINT OF THE DISCOVERIES, AT THE FOOT OF THE PRECIPICE ON THE EAST SIDE. In the background is the "Mouth of Hell" cave entrance, with the explorers' tents and an arrow marking the spot whence the subterranean river Punkva can now be reached and traversed by boat through caverns to its outlet. In the right foreground is the upper pool, into which the river first emerges. On the left is the lower pool, into which it disappears; with a man standing beside a collapsible boat. Another man is seen in the extreme left foreground. Hanging vertically down the whole picture are two ropes suspended from the top of the precipice.

our main attack had arrived. When we opened the dam on November 12 the water of the Punkva fell 5½ metres to 345.5 metres above sea-level. In the deep cavity appeared now a rocky wall dividing it into two parts, the sides falling sheer into the water. After great difficulties we placed on this projection centrifugal pumps, two electro-motors, each of 50 h.p., and transformers. We fixed cables and erected the central pumping station with a capacity of 500 litres per second. This was erected by the Moravian pump experts, Sigmund, of Olomouc (Olmütz). Meanwhile on December 13, 1932, we had another success. After opening the tunnel we had tested all the cavities on the north-east side of Macocha. The water in one had sunk so low that we could dive under the rocky side-wall (a dangerous thing to attempt) and emerge on the other side into lofty empty spaces. Over water and narrow places we squeezed through to the main cleft, which led to more water. The way here had been difficult, and the cavity into which we had dived might easily have been refilled, cutting us off from any help. So, to reach this side of the cavity more easily, we blew up the thin rocky wall under which we had dived and erected in its place a movable wire bridge. On December 18, 1932, we laid down a telephone from the central pump station to this dangerous spot called "Skviry." From here I gave the order at eleven to begin pumping. One would hardly believe that such a tremendous uproar could be created by the suction of water through the thousands of years old crevices inside the cavity. About 3 p.m. these strange acoustic phenomena ceased and to our great excitement we saw a long narrow passage enveloped in complete darkness. We had prepared two pneumatic folding boats, which we could inflate by breathing into them. At 4.30 p.m. the water had fallen for another 5½ metres. The pumps were working faultlessly. At 5 p.m. we managed to enter our boats. Before us was a wide stretch of water in a lofty passage, down which blew a strong draught of air, s

1132-THE ILLUSTRATED LONDON NEWS-Dec. 21, 1935

AN "ALADDIN'S CAVE" AT THE FOOT OF A MORAVIAN ABYSS: BOATING IN A SUBTERRANEAN FAIRYLAND.

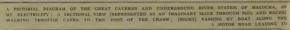
CEE BY DR. KARL ABSOLON (CONTINUED FROM PRECEDING PAGE). DRAWINGS BY MR. DOBROVOLBY, A WELL-KNOWN ARTIST WHO ACCOMPANIED THE EXPEDIT







BOATING THROUGH A FAIRYLAND IN THE DEPTHS OF THE EARTH: A TRIP ALONG THE SUBTERRANEAN RIVER PUNKVA, BENEATH HUGE STALACTITES HANGING FROM THE ROOF OF





MAGOCHA AND ITS COMPLEX OF SUBTERFANEAN CAVERNS AND STREAMS: AN "UNDERGROUND" PLAN, SHOWNC (LEFT) THE CHASM AND POOLS (ILLUSTRATED ON THE PRECEDING PAGE); THE COURSE AND DUTFLOW THE CHASM AND POOLS (ILLUSTRATED ON THE PRECEDING PAGE); THE COURSE AND DUTFLOW THE CHASM AND POOLS (ILLUSTRATED ON THE PRECEDING PAGE); THE COURSE AND DUTFLOW THE CHASM AND PROPERTY OF THE CHASM AND PROP

DISCOVERED AND OPENED UP BY DR. ABSOLON AND HIS COMPANIONS, AND LIT SHOWING (IN CENTRE) THE GREAT CHASM AND ITS PRECIPICES; (LEFT) VISITORS SUBTERRANEAN RIVER PUNKYA TO ITS OUTLET; AND (ALONG THE FOREGROUND) THE ENTRANCE.

Continued from poer 1912]

Cavity, 10 the south similar holes, down which the waters flowed off; at the end water a firm bank and finally new cavilies. Expecting nothing, we had explored a new, large, and active subterranean area of the Punkva. As soon as the pumps stopped, water quickly refilled everywhere. Our experiment had proved that the Punkva they means of the tunnel for \$\frac{5}{2}\$ metres and by pumping for o metres, making 11} metres sloggether. The firm Sigmond had already prepared their own patent pumps for use under water by a system called "Nautila." With the aid of a scaffold which we received account the whole surface of the cavity, these pumps were lowered on strong chains and such as the strength of the surface of the cavity, these pumps were lowered on strong chains and such from two electric guns (from the Siemens-Schuckert factory) two emergency ladders into the wall, so that they could easily be reached in case of need. The danger of an experiment to reduce the volume of water on the south side of Mascocha less in the first that on the north side a huge wall of water was accounted to the south side of Mascocha less in the first that on the north side a huge wall of water of the south side of Mascocha less in the first that on the north side a huge wall of water above scalevel—nearly 17 metres below normal levels. While these pumps were at work, the little band of explorers gettlered on the bank of the newly discovered account. This time we had three presentatic beat of the size and forms the so-called to the lowest tungs. We also lowered a pseumatic beat by a rope and into it a "Dantes' Inderno." We let down a wire ladder, on which some of us descended to the lowest tungs. We also lowered a pseumatic beat by a rope and into it a "Continuation of the control of the con



WONDERS OF A JOURNEY ON THE SUBTERRANEAN RIVER PUNKVA, ELOWING THROUGH WAST UNDERGROUND CAVERNS IN THE ROCK: A BOAT APPROACHING A FORK IN THE STREAM FORMING A WHIRLPOOL.

POT-HOLING IN MORAVIA: AN UNDERGROUND RIVER DIVERTED BY DYNAMITE.

ARTICLE BY DR. KARL ABSOLON (CONTINUED FROM PRECEDING PAGE). DRAWINGS BY MR. DOBROVOLNY.



MAKING AN ARTIFICIAL CHANNEL TO DIVERT THE SUBTERRANEAN RIVER PUNKVA FROM ITS COURSE: THE OUTER APPROACH TO A TUNNEL, NEARLY 500 YARDS LONG, BORED INTO THE HILL FROM THIS SPOT.



AFTER THE PUNKVA HAD BEEN DEFLECTED INTO THE TUNNEL BY DYNAMITING A ROCK WALL (AS SHOWN BELOW); THE RIVER FLOWING ALONG THE NEW CHANNEL (SEEN IN THE ADJOINING ILLUSTRATION TO LEFT).

workman, who was dragged into the whirlpool, but soon worked his way through into
the connecting cavity proper, which was now
devoid of water. From here he heard the
"Nautila" pumps working on the other side.
After several hours we took photographs, our
draughtsman made sketches for "The Illustrated London News," and we completed our
maps. When we returned to the surface later
on that evening, the snow-fields had started
to slide downwards—throughout the whole
of Central Europe a great thaw had set in.
We foresaw the consequences of this and
took every precaution. Overnight torrents
of water rushed through the River Bila Voda
into the Rasovna abyss. On February 6, 1933,
about noon the surface of the water in the
higher cavity in the Macocha cavern rose and
through Macocha flowed the dirty yellow
Punkva River, 10 metres wide. Our workmen,
managed to escape, but within a minute the
pumping station was submerged one metre
in water. Nature had had her revenge, but
twelve hours too late. Only twelve hours
earlier we had achieved the solution of the
problem, which eight generations had failed
to obtain in 200 years, and for which I also
had had to wait thirty-five years. I was even
then only just in time, for it is my fate not
to draw near to my goal until I am already
getting old. By advancing to the foot of
Macocha by land and water, only the very
[Continued below.



THE CRITICAL MOMENT WHEN THE TUNNEL REACHED THE SUBTERRANEAN RIVER-BED (LEFT): EXPLORERS (CARRYING LIGHTS) FIXING DYNAMITE CHARGES IN BORINGS THROUGH WHICH WATER SPIRTED, THREATENING TO BURST THE ROCK PARTITION—A SECTIONAL DRAWING.

The Moravian Karst, geologically very old, is not an Alpine landscape, but a flat plain with cultivated fields or exuberant forests. All over this area are several hundreds of subsidences or cavities, which extend from about half a metre to half a kilometre in size. They are shallow, or basin-shaped, like funnels or precipices. Others are still being formed, and all of them greedily suck in water. It is interesting to note that such a cavity remains unobserved in summer, but after heavy rains, or as soon as a thaw sets in, these cavities (Continued on page 1154.

HOW THE RIVER LEVEL IN A CAVITY WAS REDUCED: A DIAGRAM SHOWING THE NORMAL LEVEL (351 METRES ABOVE SEA-LEVEL) AT WHICH VISITORS ROW IN BOATS; THE LEVEL (345'5 M.) OBTAINED BY OPENING THE OUTFLOW TUNNEL (LEFT); AND THE LEVELS DUE TO CENTRIFUGAL PUMPS (339'5 M.) AND "NAUTILA" PUMPS (333'5 M.).

first step had been accomplished and we were just at the beginning of a new era of exploration here. This arrival at the bottom of Macocha was not the end, but the very beginning of a great period of investigation. The facts I have described have proved that hydrographic problems can be solved by means of technical experiments with machinery, and very quickly too. The first riddle of Macocha was already solved and appears simple now, but ahead of us lay a still greater, unsolved problem. On a map drawn from a bird's-eye view, the parts marked "unexplored" show at a glance this great unsolved mystery. If the explored area between Macocha and Punkva, extending only half a kilometre, rendered up such marvellous phenomena, what must then be hidden in the area of 40 sq. kms. still unexplored? It was evident that Macocha must be the starting-point of our new investigations. Through various methods of observation we drew the conclusion that close to Macocha to the north exists a larger subterranean basin. If we repeated the pumping experiment we should certainly reach the surface of this basin, in its continuation I expect to find lofty passages in two layers, connected by vertical precipices or "chimneys." These layers are also interesting from the geological point of view, as the upper one is filled with diluvial deposits and they originally correspond to two inter-glacial periods. Besides taking Macocha as a starting-point, we had also many other possibilities of reaching the unknown labyrinth by opening the cavities.

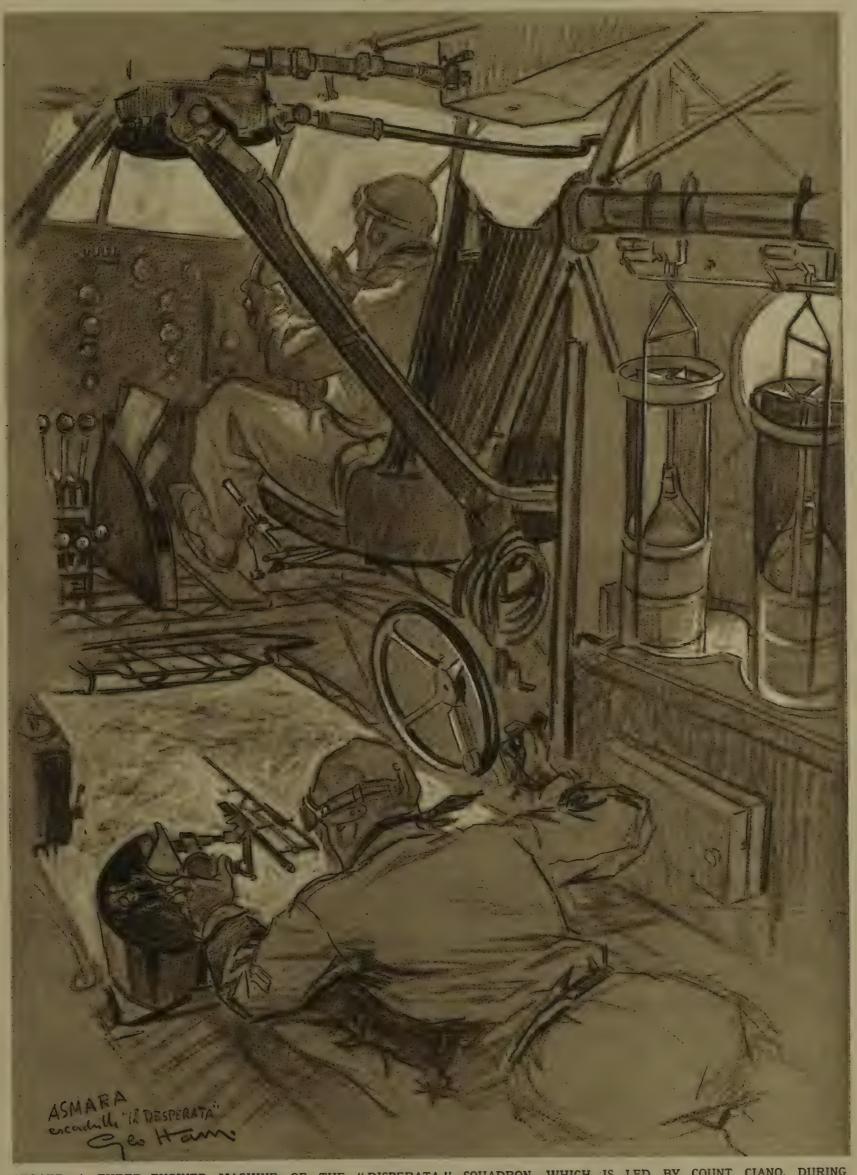
[Continued above.]



PERILS OF SUBTERRANEAN RIVER EXPLORATION; BY DARING DIVING UNDER THE WALL OF THIS DANGEROUS CAVITY, NEW DRY PASSAGES WERE DISCOVERED AND FOLLOWED FOR A DISTANCE OF MORE THAN 220 YARDS.

HOW THE "DISPERATA" SQUADRON DROPS BOMBS ON THE ABYSSINIANS.

FROM THE DRAWING BY GRO HAM, A FRENCH ARTIST WITH THE ITALIAN FORCES IN ABYSSINIA.



ABOARD A THREE-ENGINED MACHINE OF THE "DISPERATA" SQUADRON, WHICH IS LED BY COUNT CIANO, DURING A BOMBARDMENT NEAR MAKALE: THE METHOD USED TO ENSURE ACCURATE BOMBING.

This drawing was done recently by a French artist with the Italian forces in Abyssinia. With the aid of a special sighting instrument, the bomb-dropper, seen lying prone on the floor of the aeroplane, records the time taken by an object on the ground to pass along a graduated line which is part of the sighting apparatus. At the same time, with the left hand, he adjusts the sighting wires

to allow for the aeroplane's drift (if there is a side wind) and also to fix a line of sight at an angle based upon the altitude and the ground-speed factor already determined. When the target to be bombed enters the operator's line of sight, he pulls the lever on his right and so extracts the release-pins of one or more bombs. These are seen in their rack on the right.

THE ITALO-ABYSSINIAN WAR: ACTION ON LAND AND IN THE AIR-ABYSSINIAN LOSSES.

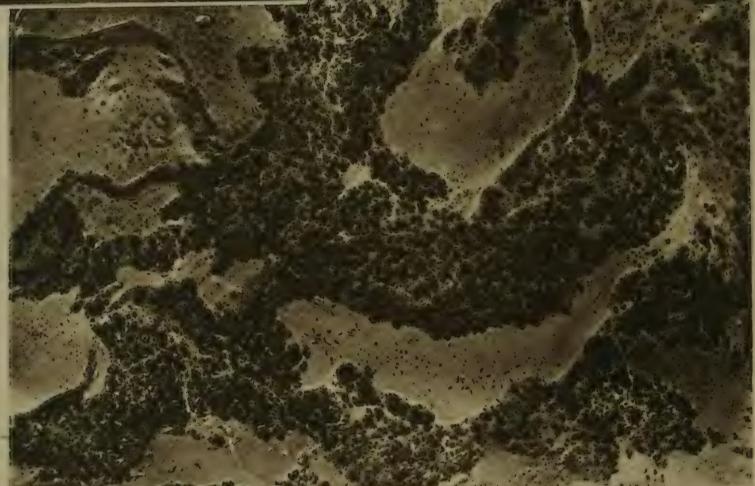




A RED CROSS TENT ON THE OUTSKIRTS OF DAGGAH BUR: A PHOTOGRAPH TAKEN BY DR. ROBERT W. HOCKMAN, WHO WAS IN CHARGE OF THE AMERICAN RED CROSS UNIT ON THE OGADEN FRONT BEFORE HIS RECENT ACCIDENTAL DEATH.

DAGGAH BUR, ON THE OGADEN FRONT: WRECKAGE OF HUTS AND BOMB HOLES AFTER AN ITALIAN AIR-RAID.

THE village of Daggah Bur, in the Ogaden southeast of Jijiga, was bombed daily by the Italians in the latter part of November. Altogether about five hundred bombs were dropped. They did much damage to property, with results illustrated in our upper left-hand photograph, but official : Abyssinian reports denied that anyone was killed. The aeroplanes flew above effective rifle range, as had been their practice since the attack on Taferiketema, when two of them were brought down. The raids, however, had the indirect effect of causing the death, some time later, of Dr. Hockman, the young American doctor in charge of the American Red Cross unit on the Ogaden front. He lost his life in [Continued below.



HOW AN ABYSSINIAN PARTY OF CAVALRY AND CONVOY APPEARS TO AN ITALIAN AIRMAN: THE VALLEY OF ENDA MIKAIL, ON THE NORTHERN FRONT, BEFORE BOMBARDMENT; SHOWING ABYSSINIANS (LOWER CENTRE) IN AN OPEN PART.



WOUNDED WARRIORS, ON THEIR RETURN TO DESSIE FROM THE NORTHERN FRONT, BEING TAKEN TO THE RED CROSS HOSPITAL WITH THE AID OF LIGHT FROM BON-FIRES: THE IMPROVISATION OF RELIEF.

trying to screw off the cap of an unexploded bomb, when the bomb went off. It was Dr. Hockman who took both the photographs reproduced at the top of the page. The Emperor, in a telegram of sympathy to the widow, described him as Abyssinia's most valuable Red Cross worker. Our middle photograph shows



THE EMPEROR IN THE WAR ZONE AT DESSIE, WHERE HE HAD A NARROW ESCAPE FROM DEATH IN A BOMBARDMENT OF THE TOWN: A VISIT TO THE RED CROSS . . . HOSPITAL, WHICH SUFFERED SEVERELY FROM ITALIAN BOMBS.

the valley of Enda Mikail on the northern front. There the Italians found, by the valley of Enda Mikail on the northern front. There the Italians found, by air reconnaissance, a large concentration of Abyssinian troops and stores; and the bombing which followed was described by a writer in "L'Illustration" as the most important, both in extent and in results, yet carried out in the whole campaign. The Italian methods are shown in the drawing reproduced on another page in this issue. The two lower photographs were taken at Dessie, and show the kind of arrangements being made there for Abyssinian wounded.



THE AMERICAN HOSPITAL AT DESSIE DAMAGED BY BOMBS FROM AEROPLANES: PART OF THE BUILDING DESTROYED AFTER IT HAD BEEN HIT FIVE TIMES.

THE Italian air raid on Dessie on December 6 was reported in our last issue: here we give photographs taken at the time. As we said, a strongly worded protest was sent to the League by six doctors of the Tafari Makonnen American Hospital at Dessie, complaining of the violation of international rules by the Italians, and maintaining that the building had the Red Cross painted all over the roof. Their telegram gave details of the casualties and damage-namely, some scores of victims killed or wounded in Dessie, the instrument room of the hospital, two wards, and the surgical tent of No. 2 dressing station destroyed by bombs, and the annexe hit. (Later the figures were given as fifty-three dead and two hundred injured.) An Italian statement to the League alleged that many buildings in Dessie were covered with the Red Cross, including encampments of armed men and even the aerodrome, and protested against such an abuse of the Red Cross emblem.



AN OUTLYING PART OF THE AMERICAN HOSPITAL BURNING AFTER BEING HIT BY AN INCENDIARY BOMB; A RAID IN WHICH THERE WERE SCORES OF CASUALTIES, MANY QF THEM ABYSSINIAN WOUNDED LYING IN HOSPITAL.

STUDENT RIOTS IN CAIRO.

Since the student riots in Cairo illustrated in our issue of November 23, similar disturbances have occurred there intermittently during several weeks. On December 2, for example, Wafdist students attacked the house of the Liberal leader, Mohamed Pasha Mahmud, who had warned the public against their propaganda. The same night demonstrators in the European quarter were dispersed by police. More serious riots occurred on December 8, when a gang of medical students burnt four tramcars, and the Assistant Commandant of Police, W. R. Lucas Bey, was stoned and seriously wounded. Every night for a week, it was stated, bands of students had paraded Cairo, shouting Wafdist slogans. Further outbreaks took place on December 9, when another tramcar and two motor-buses were burnt or wrecked. The police had to fire, and one student died of his injuries. The change in the political situation caused on December 11 by the restoration of the 1923 Constitution produced a feeling of relief. Thereafter the students' activities took the form, for the most part, of jubilant celebrations of this event, but on the 15th a British Army despatch rider was molested by a crowd.



EGYPTIAN POLICE, IN STEEL HELMETS AND ARMED WITH STAVES, DISPERSING DEMONSTRATORS IN THE STREETS OF CAIRO: A SCENE TYPICAL OF A NUMBER OF SIMILAR DISTURBANCES DURING RECENT WEEKS.



ONE OF SEVERAL TRAMCARS BURNT OR OTHERWISE DESTROYED BY STUDENT RIOTERS IN CAIRO, AS WELL AS TWO MOTOR-BUSES: THE WRECKED VEHICLE, WITH FIREMEN AT WORK EXTINGUISHING THE FLAMES.



TYPES OF EGYPTIAN STUDENTS CONCERNED IN THE CAIRO RIOTS THAT CONTINUED INTERMITTENTLY FOR SEVERAL WEEKS: ARRESTED MEN IN A WIRE-NETTED LORRY.

INSURRECTION IN BRAZIL.



THE INSURRECTION IN BRAZIL: THE VERMELHA BARRACKS IN RIO DE JANEIRO, WHERE A REGIMENT HAD REVOLTED, IN FLAMES AFTER HAVING BEEN UNDER ARTILLERY FIRE FROM LOYAL GOVERNMENT TROOPS.



AN INCIDENT IN THE FIGHTING ROUND THE VERMELHA BARRACKS AND THE AVIATION SCHOOL DURING THE INSURRECTION AT RIO DE JANEIRO; GOVERNMENT TROOPS RUSHING A REBEL POSITION.



THE DISMAL END OF THE INSURRECTION IN RIO: REBELS WHO SURRENDERED, AFTER AEROPLANES AND ARTILLERY HAD BEEN USED AGAINST THEM, BEING MARCHED OFF IN THE RAIN BETWEEN LINES OF GOVERNMENT TROOPS.

As noted in our issue of December 7, when we illustrated the fighting in Recife, a rebellion broke out in Brazil on November 24. Clashes at Recife and Natal were followed by fighting in Rio de Janeiro, where Communist elements in the School of Aviation and the 3rd Regiment rose in revolt. They obtained temporary command of the Aviation School and the Vermelha Barracks. In the heavy fighting which followed, the Government forces employed bombing aeroplanes and both sides used artillery and machine-guns. The rebels were forced to surrender, first at the Aviation School and then at the Barracks, but before doing so they burned down the School and all the aeroplane sheds on the field. The casualties were twelve dead and thirty wounded, and 230 prisoners were taken at the Barracks by the loyal troops. The rising in Rio de Janeiro was stated by the Government to have been part of the general revolt which began in the Northern States, and was supposed to have had Communist instigation.

Chinese Masterpieces at the R.A.: Perfection of Form and Colouring.

ANGEMENT WITH THE MEDICI SOCIETY AND BY COURTESY OF THE OWNERS. (COPYRIGHTS RESERVED.)



"BIRDS AND FLOWERS": A SILK TAPESTRY (K'O SSU), AFTER SHEN TZÜ-FAN—ASCRIBED TO THE SUNG DYNASTY, BUT PROBABLY LATER. Lent by the Chinese Government.





"THE FOUR HAPPY OMENS": A PAINTING IN COLOUR ON SILK BY CHIANG T'ING-HSI (1669-1732 A.D.)—DATED 1723, YUNG CHÊNG PERIOD.

Lent by the Chinese Government.



A GROUP OF CHUN WARE OF THE SUNG DYNASTY (960-1279 A.D.): (TOP LEFT) A FLOWER-POT STAND, WITH OPALESCENT PURPLE GLAZE, LENT BY SIR PERCIVAL DAVID, BT.; (LOWER LEFT) A BOWL WITH LOBED SIDES, LENT BY A. SCHOENLICHT, THE HAGUE; (CENTRE) A SIX-LOBED FLOWER-POT, LENT BY THE UNIVERSITY OF PENNSYLVANIA MUSEUM; (TOP RIGHT) A BOWL LENT BY F. SCHILLER; AND (LOWER RIGHT) A DEEP BOWL IN "SOFT CHUN" WARE, PERHAPS OF THE YUAN DYNASTY (1280-1368 A.D.), LENT BY M. CALMANN, PARIS.

THESE reproductions of objects shown in the Exhibition of Chinese Art at the Royal Academy give a fine idea of the beauty and delicacy of colouring which is so notable a feature of the Exhibition as a whole. Our upper right-hand illustration shows a group of Chün ware, one of the finest of the Sung dynasty wares. "Chün ware," writes Mr. Leigh Ashton in "Chinese Art," the book in which he is co-author

with Mr. Basil Gray, "is in some ways the most beautiful of all these from the wide variety of its colouring. The kiln was at Chun Chou, in the province of Honan. The forms of the pieces are of domestic shape, flower - pots, drinking - bowls, wine-holders, etc. The paste is of two varieties, a rougher family varying in tone from greyish-yellow to reddish-buff (sha t'ai) and a close porcellanous type of a grey colour (tz'u t'ai)."



A SEATED POTTERY STATUE OF A LOHAN; IN HARD WHITE WARE WITH YELLOWISH-WHITE GLAZE, COLOURED WITH GREEN AND YELLOW; WITH POTTERY STAND—T'ANG DYNASTY (618-906 A.D.)

Lent by the University of Pennsylvania Museum



THREE GILT BRONZE BEARS OF THE HAN DYNASTY (206 B.C-220 A.D.). (Left) lent by the City Art Museum of St. Louis, Missouri; (centre) lent by H. J. Oppenheim; (right) lent by A. Stoelet, Brussels.



THE LARGEST MAN-MADE HOLE IN THE EARTH: THE VAST CAVITY OF THE OLD KIMBERLEY DIAMOND MINE, ONE OF THE SIGHTS OF SOUTH AFRICA.

The name Kimberley will always be associated with diamonds, owing to the fabulous wealth derived from the surrounding mines. The above picture shows the old Kimberley Mine, where claims were first pegged out on Colesberg Kop in 1971, a strip being taken from each to form roadways: through the workings. This immense hole in the earth was created by continual excavation each side of the

roadways, causing landsides and falls as the workings deepened. Diamondiferous soil was therefore hauled from the edges of the mine, but, with 1,000 to 12,000 digges, working claims, the confusion can be imagined. In 124, when the mine had reached a depth of 100 feet, water appeared in large quantities and the workings began to disintegrate and fall in. Such chaos ensued that the mine

became unworkable. Many claims were buried, and eventually the various holdings were consolidated under the single control of De Beers Consolidated Mines, Ltd. This development is a romantic episode in South African history, linked with the name of Cecil Ritodes. The vast cavity, like a volcanic crater, as it appears to-day covers an area of about 38 axers from lip to lig, and is hundreds of feet

deep. As a work of human agency, it is an awe-inspiring and unique spectacle. No visitors to South Arica should miss seeing Kimbeley and making one of the many tours round the diamond mines. Those of our readers who are interested snould apply for information to the Director, Politicity and Travel Bureau, South Africa House, Trailagar Square, London, W.C.D.

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BEING AN APPRECIATION OF

HARDY AND HIS WIFE": By JOHN GORE.* " NELSON'S

(PUBLISHED BY MURRAY.)

"DON'T throw me overboard, Hardy; take care of my dear Lady Hamilton, take care of poor Lady Hamilton. Kiss me, Hardy." The words have become almost as famous as the Trafalgar signal. They form the climax of a very moving scene in a great historical drama by another Hardy, also Thomas, and also a Dorset man. But for those broken words, it is probable that posterity would have forgotten Sir Thomas Hardy. Yet in his day he was a very successful and distinguished naval officer, who advanced steadily through the whole cursus honorum of his profession. Nelson early formed a high opinion of him, which was not entirely reciprocated. Hardy's conventional nature sternly disapproved of Nelson's dallyings with Lady Hamilton; and according to his wife, "Sir Thomas's opinion of Lord Nelson was that to most people he was not easy to live with or attractive in his manners, being fidgetty to the greatest degree, vain and proud." In later years, however, Hardy loyally honoured the memory of his dead leader, and his earlier judgment was due to his own complete absorption in his profession and his disapproval of any distractions from it. He held commands, with unfailing success, on different stations—Chesapeake Bay, Lisbon, South America—and passed, with almost mechanical precision, to the ranks of Rear-Admiral and Vice-Admiral of the Blue. He was Chairman of an important Admiralty Committee on Naval Construction, and in 1834 was appointed Governor of Greenwich Hospital, in which office he died five years later. All accounts agree upon his high efficiency and his force of



LADY HARDY IN MIDDLE AGE: THE WIFE FIRST OF "NELSON'S HARDY" AND LATER OF LORD SEAFORD, AND THE AUTHOR OF JOURNALS AND CORRESPONDENCE ON WHICH MUCH OF MR. GORE'S BOOK IS BASED.

From a Miniature in possession of Joan, Countess Cawdor.

character; but, as Mr. Gore observes, he is the despair of biographers who aim at pictures in light and shade, and in this book he is incidental only to the far more lively character of his wife.

in this book he is incidental only to the far more lively character of his wife.

She was a Berkeley, born in 1788, and at nineteen she married the forty-year-old Thomas Hardy. Like every other act in Hardy's life, the marriage was a conventional gesture, and the young wife soon found—not without protest—that she was distinctly secondary to a naval career. She was left to her own devices for long periods together by her husband, who seems to have taken only a perfunctory interest in his family of three daughters. Lady Hardy, however, found ample means of occupying herself in endless social activities in London, Paris, Switzerland, and Italy. Her life of nearly ninety years covered an extraordinarily interesting period; she met every famous personage of the time, and was an indefatigable traveller. After Sir Thomas Hardy's death, she married Lord Seaford, a lifelong friend both of herself and of her first husband. He died in 1844, and in the last thirty-three years of her life neither age nor widowhood abated her zest for society. By good fortune, she was a diligent diarist and an insatiable hoarder of faits divers. Her voluminous papers have been preserved by descendants, and are now made public for the first time. Under Mr. Gore's judicious editorship, they form a singularly interesting

* "Nelson's Hardy and his Wife: Some Account of the Lives and Married Life of Vice-Admiral Sir Thomas Masterman Hardy, G.C.B. ('Nelson's Hardy'), and of his wife, Louisa, Lady Hardy (afterwards Lady Seaford), Derived from the Hitherto Unpublished Journals and Correspondence of Lady Seaford, and from the Hardy Papers. 1769-1877." By John Gore. (John Murray; 10s. 6d.)

footnote to history. Literary chroniclers will hail them as providing the solution of a minor-but-controverted Byron mystery. They have no literary pretensions, and are valuable not for their form but for their simply-presented

subject-matter.

Lady Hardy seems to have been a "character." There are many testimonies to her social talents, which appear to have been founded on personal charm rather than on



"NELSON'S HARDY": VICE-ADMIRAL SIR THOMAS MASTERMAN HARDY, G.C.B.—FROM AN ENGRAVING BY H. ROBINSON, AFTER A PAINTING BY R. EVANS, IN THE POSSESSION OF SIR MALCOLM MACGREGOR OF MACGREGOR, BT.

Reproductions by Courtesy of Messrs. John Murray, Publishers of "Nelson's Hardy and His Wife."

wit or brilliance. She was evidently welcome everywhere, though there is one contemporary opinion that she was "a great gossip"—which we can well believe. She made an impression on Byron, who honoured her with his confidences and described her as "an especial favourite"—no small compliment from a disillusioned man who at this time (a year before his death) was a severe critic of women. Though Lady Hardy's virtue seems to have been unassailable, she was not above mild coquetry, and she never lacked admirers, some of them too ardent to be entirely amusing. The half-mad and wholly depraved Duke of Buckingham conducted, by anonymous letters and other discreditable means, an insane campaign of calumny against her relations with Lord Abercorn; the Morning Herald had to pay £1000 damages for repeating one of these scurrilities, and Sir Thomas called Buckingham out, though the duel was abortive. Some years later, in Florence, Lady Hardy seems to have been much pestered—greatly to the malicious amusement of Byron—by the attentions of the disreputable Mr. Wedderburn Webster. Here we have an interesting, if somewhat sordid, link with Byron's life-story. Byron had had an early intrigue with Webster's young wife, Lady Frances Webster, and it now appears beyond doubt, from the letters published for the first time in this volume, that this lady was the subject of the celebrated "When We Two Parted." The letters also disclose a suppressed final verse of the poem, with the typical Byronic ending verse of the poem, with the typical Byronic ending—

Byronic ending—

For the woman once falling

For ever must fall.

It is no less typically Byronic that at the time of the letters to Lady Hardy (1822),
Byron was contemptuously taking steps for the arrest of the injured husband, who owed him considerable sums.

Byron was distantly related to Lady Hardy; their friendship was cordial but brief, for Byron was soon to embark on his Greek adventure. At this time he was living with the Countess Guiccioli in Italy, and was seeing a good deal, from time to time, of the Blessingtons and the Count d'Orsay. The six letters which are here given to the world were extremely well worth rescuing from oblivion. They are such letters as only Byron could write—half-gay They are such letters as only Byron could write—half-gay

and half-bitter, full of characteristic strictures on frail human-nature, and above all, the relections of a man who is trying to persuade himself and others that he despises the society which has rejected him. We may suspect, without injustice to Lady Hardy's memory, that her feeling for Byron was a little warmer than friendly interest—at all events, in some of his raillery there is a distinct note of "warning-off." Lady Hardy's judgment of the poet was the usual feminine one of indulgence for a "misunderstood" man. "It struck me very much in that day he passed with me, that, had he fallen into good hands, and if his wife had been a softer and more desirable woman, he might have been very different. He went to Greece the year following my seeing him at Genoa and he died of fever. He had many faults and had been wretchedly brought up by a vulgar, ill-tempered mother and then was spoilt by the world he knew nothing of, and married against his will for fortune to a person wholly unsuited to him, and this drove him out of England and into very corrupt society. But he had many fine qualities and died at 36 years of age, so all his youthful follies were brought against him and his character held up to the criticism of those who were misled by his enemies." It is not, on the whole, an unfair estimate.

Lady Hardy witnessed two coronations. She saw much of William IV.—not with any marked pleasure—at Greenwich, but has little to tell of Victoria, except the first attempt on her life by Edward Oxford. She mentions castally the burning of the Houses of Parliament in 1834, and recalls several nine-day-wonders of her time, such as the suicide of Berkeley Craven after his losses on the Derby in 1836, and the grues much of William IV.—not with any marked pleasure—at Greenwich sparted the typical count, with long lists of glittering names; and, though most of the incidents are trivial, the whole record presents an animated picture of a vanished society which one would have thought oppressive in its monotonous social seroe. "I



LOUISA HARDY, WHO WAS BORN IN 1808: THE ELDEST DAUGHTER OF SIR THOMAS HARDY. From a Miniature in possession of Joan, Countess Cawdor.

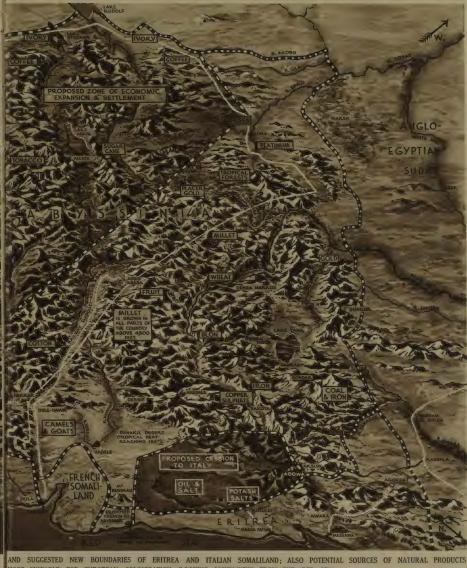


WHAT THE ANGLO-FRENCH PEACE PLAN WOULD MEAN TO ITALY AND ABYSSINIA: A CONTOUR MAP SHOWING EXISTING FRONTIERS AND (ENCLOSED WITHIN A WHITE LINE) THE APPROXIMATE AREA OF ABYSSINIAN TERRITORY

The Anglo-French proposals for peace terms between Italy and Abyssinia, recently transmitted to their respective Governments and communicated to the League of Nations, fall under two main heads—(i) Exchange of Territories; (2) Zone of Economic Expansion and Settlement. Under (i) Italy would receive Eastern Tigré (Including Adowa but not Aksum); the Danakil area (except an Abyssinian corridor to the sea); and territory in the Ogaden: Abyssinia would receive a corridor to the port of Assab, in Eritrea, on the Red Sea. Under (2) Italy would have exclusive economic rights in a suggested zone in southern Abyssinia, but Abyssinian sovereignty would be preserved there. The administration, however, would be controlled by the services of a League scheme of assistance, in which services Italy would take a preponderating share. Commenting on the proposals, in a letter to the League, the

Abyssinian Minister in Paris said: "Ethiopia, the victim of an act of aggression formally recognised as such by the Council and by the Assembly, is invited (1) to cede to its Italian aggressor in a more or less disguised form, and under the pretext of a fallacious exchange of territories, about half of its national territory, to enable of a lainacous exchange of territories, about anil of its nauronal territory, to exactly the agreestor country to settle part of its population there; (2) to agree that the League of Nations should confer upon its aggressor, in a disguised form, control over the other half of lits territory, pending future amexation. Our map is designed to show, not only the suggested new frontiers, but the economic bearing of the proposed changes. The November number of "The Fortighty!" contains an article on "Abystinia as a Colonial Asset" by Miss Elizabeth Monroe, joint author of "A November number of "The Fortighty!" contains an article on "Abystinia as a Colonial Asset" by Miss Elizabeth Monroe, joint author of "A History of Abyssinia," and partly responsible for the booklet "Abyssinia and

DRAWN BY OUR SPECIAL ARTIST, G. H. DAVIS, WITH THE ASSISTANCE



MOST SUITABLE FOR EUROPEAN COLONISATION—(LOOKING SOUTH-WEST FROM THE RED SEA).

that the country falls, roughly, into four zones: (1) Land above 8000 ft., forming most of the northern part of the plateau, scored by canyons sometimes 3000 ft. deep, and including a high range with a pleasant climate, where Europeans can do administrative or clerical work but "physical exertion brings on a pumping heart"; (2) a zone between 4800 and 8000 ft., the most suited to European colonisation, covering mainly the southern part of the central plateau; (3) a tropical zone, from 2500 to 4800 ft. (comparable in climate to the coffee and cotton-growing parts of 2500 to 4000 ft. (comparance in Liniuxe to rule toline and cottodictowing parts of a featil) where Southern European labour is possible but trying; (4) a zone covering the Danakil, Aussa, and Ogaden plains, where he temperature in tents (the only shade available) is often 156 degrees. "The possibilities of actilement in the first

THE ROYAL INSTITUTE OF INTERNATIONAL AFFAIRS.

and last zones (we read) are limited in the one, nil in the other, but the second and third undoubtedly ofter scope for development. Suppose a vest coulty or communications and irrigation, the second and third come serial to be capable of yielding the materials really vital to prosperity, of which the chief is cotton. The second would provide cereals, peacher, grapes and the circum fruits; the third cotton, staal, coffee and sugar, with a possibility of rubber. The fourth, except for behannas in the lower Juba and Webl Schebell valleys, may be discounted." bananas in the lower juba and Webl Schebell valleys, may be discounted." There is some oil in the Danahli country, and coal is said to occur in mountains, towards the Sudan, but none is mined. Potash, mics, gold, and platinum are the only metals commercially developed. Platinum is the chief mineral asset, the principal deposits being near Gore. There are rumours of gold in the Danahil region.

PERSONALITIES OF THE WEEK: PEOPLE IN THE PUBLIC EYE.



RETIRING GOVERNOR - GENERAL OF AUSTRALIA HOLDING INVESTITURE: SIR ISAAC ISAACS CONFERRING A KNIGHTHOOD.





THE BRITISH MINISTER IN ADDIS ABABA: SIR SIDNEY BARTON (CENTRE; WEARING HAT) AND HIS LEGATION STAFF.

We illustrate here the scene at the investiture held in the Queen's Hall, Melbourne, by Sir Isaac Isaacs, retiring Governor-General of Australia, while a knighthood was being conferred on Mr. George Ritchie, South Australian Minister of Mines. To the left of the Governor-General is Lord Huntingfield, Governor of Victoria. Sir Isaac is being succeeded by Lord Gowrie (Brigadier-General Sir Alexander Hore-Ruthven).



THE HOUSE OF LORDS TRIAL: LORI IN HIS PEER'S ROBES LORD DE CLIFFORD

Lord de Clifford was found Not Guilty by his peers in the House of Lords on December 12. He was charged with manslaughter in connection with a motor accident. His counsel submitted that there was no case, a contention which was upheld by the judges. His trial on a charge of dangerous driving may be at the Old Bailey in January.



THE RESIGNATION OF THE PRESIDENT OF CZECHOSLOVAKIA:

DR. T. G. MASARYK, WHO HAD HELD THIS OFFICE SINCE
THE FOUNDATION OF THE REPUBLIC.

Dr. Thomas G. Masaryk, President of the Czechoslovak Republic since it was founded seventeen years ago, made his expected resignation on December 14. The causes were ill-health and advanced age—Dr. Masaryk being eighty-five. Dr. Masaryk indicated Dr. Benesh as his successor. His last political act was to issue an amnesty for political prisoners.



MARSHAL BADOGLIO (LEFT), ITALIAN C.-IN-C EAST AFRICA; WITH GENERAL TERUZZI.

Marshal Badoglio, who succeeded General de Bono as Italian High Commissioner in East Africa recently, is Chief of the Italian combined general staff. It was generally suggested that the change in command was made because it was felt in Rome that Italian progress was in some degree unsatisfactory.

General Teruzzi commands a Fascist division.



CAPTAIN KANE (LEFT) IN LONDON AFTER
HIS RELEASE FROM A SPANISH PRISON.
Captain Kane, of the British steamer "Brompton
Manor," who was serving a six months' sentence for,
it is alleged, having forcibly resisted the police in
Mahon, Minorca, was released on December 12, and
reached England on the following day. Captain
Kane, who was imprisoned in Palma, Majorca, was
originally sentenced to three years' imprisonment.



THE PRINCE OF WALES OPENS NUFFIELD HOUSE—THE NEW WING OF GUY'S HOSPITAL: H.R.H. WITH LORD NUFFIELD, THE DONOR (LEFT). The Prince of Wales, President of Guy's Hospital, opened Nuffield House (the new wing of the hospital, built to accommodate paying patients) on December 10. The cost of the building and of its equipment, amounting to over £70,000, has been entirely borne by Lord Nuffield. In his speech, the Prince announced that Lord Nuffield had consented to act as treasurer of the hospital.



DAME BEATRIX LYALL: RE-ELECTED TO THE

DAME BEATRIX LYALL; RE-ELECTED TO THE L.C.C. AT EAST FULHAM.

Dame Beatrix Lyall, the Municipal Reform candidate in East Fulham, has regained her seat on the London County Council. She obtained a majority of 674 over her Socialist opponent, Mr. James McColl. She had previously been Member for East Fulham for history years. She was Vice-Chairman of the London County Council in 1932.

Manager Table SOM OF THE PROPERTY OF THE PRO

THERE are always some procrastinators who put off till the eleventh hour their choice of Christmas presents. For their benefit, whether as book-givers or as receivers of book-tokens, I write this present screed, with a fellow-feeling for their tribulations. Last week I dealt faithfully, if a little sketchily, with gift-books (mainly for the younger fry) prepared specifically for the Christmas market. Here I will touch lightly on a number of books for grown-ups, which, though not primarily designed as seasonable gifts, are eminently suitable either for Christmas or birthdays. (This last word reminds me that there are people—among them the Duchess of Gloucester—who were born on a Christmas Day. They, of course, should receive two of everything.)

In this year of the Silver Jubilee I can imagine no more welcome or appropriate gift-book than "King George V. As a Sportsman." An Informal Study of the First Country Gentleman in Europe. By J. Wentworth Day (Editor of The Illustrated Sporting and Dramatic News). With fifty-two Photogravure Illustrations (Cassell; 15s.). Here we have a delightful "literary portrait" of our well-beloved King in his private capacity as "the Squire of Sandringham," as a first-class shot, a zealous farmer and stock-breeder, a devotee of yachting, the Turf, and pigeonracing, and above all as the personal friend of his tenantry. There is also a chapter on his Majesty's experiences after big game (tiger, rhino, and bear) in India, including a tense moment when he dealt as coolly with an enraged rhinoceros charging his elephant as with a pheasant or a grouse. The book is written in felicitous style and with obvious sincerity. Besides the author's own work, it contains contributions by Major Brooke Heckstall-Smith, Secretary of the Yacht Racing Association (on the King as a yachtsman), Mr. Anthony Heckstall-Smith (on the story of the Britannia), Mr. Cecil Leveson-Gower (on his Majesty's bloodstock and the Newmarket stable), Professor J. B. Robertson (on the influence of the royal bloodstock on the English Turf), Major W. H. Osman (on the King's racing pigeons), and Mr. A. Croxton Smith (on the King's gun-dogs).

pigeons), and Mr. A. Croxton Smith (on the King's gun-dogs).

Apart from its deep personal interest, revealing the King as "a very human, lovable man, an English gentleman and a sportsman of the old school," Mr. Wentworth Day's book is valuable as a general study of modern conditions in British rural life. He vindicates field sports as an integral factor in the prosperity of the countryside, from which the nation draws its life-blood, and discusses the existing state of land-ownership and agriculture. He looks for a reduction of the Death Duties on land—"the first bank in the country, the root of all food"—and for more protection for our farmers against foreign competition. "Unless this is done," he writes, "the heart will go out of the land and its people, and Britain will be left a gigantic parasite relying for its food on the unstable markets of other countries and the more than dangerous lines of sea communications in time of war."

countries and the more than dangerous lines of sea com-munications in time of war." It has been the King's part to lead his people "back to the old and primal values," and there are rays of hope for the future.

Another happy choice this year would be "THE KING'S BOOK" (Raphael Tuck; 3s. 6d.), further described as "the Book of the Family of the British Empire,'" all profits from which go to King George's Jubilee Trust. It contains his Majesty's broadcast message to the Empire last Christmas, portraits of the King and Queen, a sonnet by the Poet Laureate, and short historical essays on the various constituent countries in the Empire, by Sir Philip various constituent countries in the Empire, by Sir Philip Gibbs, Sir Wilfred Grenfell, Sir Walter Lawrence, John Drinkwater, Arthur Bryant, and "Ian Hay." Each essay is accompanied by a large symbolic colour-plate, and the royal message has a heraldic border in colour.

Somewhat akin to the foregoing work in theme and spirit is "A PAGEANT OF ENGLAND'S LIFE." Presented by her Poets. With a Running Commentary by John Drinkwater (Thornton Butterworth; 7s. 6d.). The poetic period covered ranges from William Langland (author of "Piers Plowman") to Shelley, and there is a hint of a sequel. The poems and extracts chosen are those in which poets have celebrated people or events at first

hand. Another excellent anthology is "The New Book of English Verse." Edited by Charles Williams. Associated Editors, Lord David Cecil, Ernest de Selincourt, and E. M. W. Tillyard (Gollancz; 7s. 6d.). This volume contains nothing given in Palgrave's "Golden Treasury" or "The Oxford Book of English Verse," to which classic collections it is intended to form a companion. The chronological limits are not indicated, but one of the latest poets included is Thomas Hardy (1840-1928). There is nothing of Kipling, Watson, Yeats, Bridges, or Masefield.

One important part of the Empire is represented by "The Face of Mother India." By Katherine Mayo, author of "Mother India" (Hamish Hamilton; 12s. 6d.), a large and lavishly illustrated volume with over 400 photographs, showing manifold phases of that wonderful land now entering on a new chapter of its history. Miss Mayo describes her new work as "a story-picture book," whose aim is "to give eye-witness of India as India stands to-day." Neither text nor photographs neglect the sinister and macabre side of the subject. In an introductory outline of Indian history Miss Mayo discusses, from her well-known standpoint, such problems as child-marriage, the Untouchables, and the Hindu-Moslem antagonism.

Students of Oriental religious sculpture will enjoy "Indian Influenjoy Indian Inflo-ences in Old Balinese Art." By Dr. Willem F. Stutterheim, late of the Dutch East Indies Archæological Service. Archæological Service. With twenty-three Plates (The India Society, 3, Victoria Street, S.W.I; 15s.). "Bali," we read, "succeeded in creating out of Hinduism a purely national culture." The art of this East Indian art of this East Thenau-island contrasts strongly with that studied in "Arts of West Africa" (excluding Music).



THE HUNGARIAN HISTORICAL MUSEUM FOLLOWS THE CUSTOM OF ISOLATING ONE OUTSTANDING TREASURE AT A TIME, WHICH WAS INITIATED BY THE VICTORIA AND ALBERT MUSEUM WITH ITS "TREASURE OF THE WEEK" AND FOLLOWED BY BERLIN: THE "TREASURE OF THE MONTH"—A MAGNIFICENT EIGHTEENTH-CENTURY BROCADE DRESS.

The Hungarian Historical Museum has followed the custom

The Hungarian Historical Museum has followed the custom initiated at the Victoria and Albert Museum (and since introduced in Berlin—once a month) of isolating one outstanding treasure. In the Hungarian Historical Museum this is to be done once a month. The sumptuous Hungarian dress seen here dates from the middle of the eighteenth Century, and is made of very fine Lyons brocade. The apron and sleeves are modern reconstructions after old patterns.

in "Hunting Countries."

The apron and sleeves are after old patterns.

If a pron and sleeves are after old patterns.

If a pron and sleeves are after old patterns.

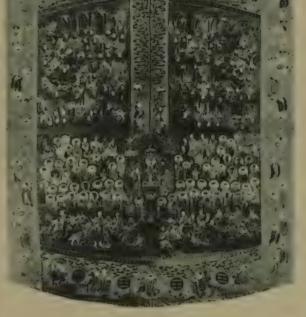
If a pron and sleeves are are the property of the are the Duke of Buccleuch's and the Berkeley. The humorous side of the hunting-field is stressed in "Yonder He Goes." A Calendar of Hunting Sketches. By Ralph Greaves. Illustrated by T. Ivester Lloyd (Collins; ros. 6d.). Fox - hunting predominates, but shooting, yachting, fishing, and other

pursuits also figure in an album of drawings by a noted comic artist—"Sport: And There's the Humour of It." By G. Denholm Armour (Hutchinson; 10s. 6d.). While in Mr. Armour's delicious cartoons the lighter aspects of flying are not neglected, the growth of that newest form of adventure is outlined in more serious vein with abundant photographs in "Flight." The story of Aviation in Pictures and Text. By Agnes Rogers (Harper; 7s. 6d.). A seasonable form of sport in its highest manifestations is exquisitely pictured by the camera in "The Beauty of Skating." By Dr. Manfred Curry. Foreword and notes on skaters by J. D. Richardson, N.S.A. Gold Medallist (Miles; 15s.). The marvellous leaps and gyrations of these expert skaters are highly picturesque. are highly picturesque.

For those who manage to enjoy nature and the open-air life without the added stimulus of sport, there is a wealth of alluring literature. To bird-lovers I commend a large and beautifully pictured quarto, entitled "BIRDS ASHORE AND A-FORESHORE." By Patrick R. Chalmers. With sixteen Water-Colours and many Line Drawings by Winifred Austen (Collins; 21s.). Both author and artist are of high repute, and their collaboration lends exceptional distinction to this magnificent book. A

this magnificent book. A kindred work of more modest dimensions, but likewise possessing the charm of enthusiasm and charm of enthusiasm and personal observation, is "Birds and the Sea." By Frances Pitt, author of "The Naturalist on the Prowl." With thirty-one Illustrations from Photographs (Longmans; 6s.). The study of marine creatures, in some ways the most fascinating branch of natural history, because of its mysteries and unsolved secrets, claims two beguiling books. Nearly 130 excellent photographs, with a coloured frontispiece, illustrate "Life of the Shore and Shallow Sea." By Douglas P. Wilson, By Douglas P. Wilson, M.Sc., Assistant Naturalist to the Marine Biological Association, Plymouth to the Marine Biological Association, Plymouth (Nicholson; 12s. 6d.). Less sumptuous in illustration, but well provided therewith in point of number, is "A NATURAL HISTORY OF THE SEAS." By E. G. Boulenger. Director, Zoological Society's Aquarium (Duckworth; 7s. 6d.). The author's purpose has been "to survey systematically "to survey systematically the ocean's teeming populace in a manner acceptable to the general reader." There is a chapter the throne.

on sea monsters, including our elusive friend of Loch Ness, relegated by Sir Arthur Keith to the realm of psychology rather than zoology.



THE TREASURE OF THE WEEK AT THE VICTORIA AND ALBERT MUSEUM: A CHINESE ROBE, MADE FOR A TA'OIST PRIEST, AND OF A TYPE NOT REPRESENTED AT BURLINGTON HOUSE; EXQUISITELY EMBROIDERED WITH WHAT IS PROBABLY THE TA'OIST PARADISE.

TA'OIST PARADISE.

Probably, this robe dates from the eighteenth century. The scene represented appears to be the Ta'oist Paradise, and in the lower border are the Eight Mystic Trigrams (Pa-Kua). The prevailing colours in the robe (red and yellow) were colours not generally worm by private citizens. As an example of technical skill in embroidery it ranks very high. The difficulties of subordinating the colours to a glowing harmony have been triumphantly overcome. The design too, is masterly in the way in which the serried rows of very similar figures are given variation by slight differences of pose or colour, while each variation helps to lead the eye inevitably inward to the central figure on the throne.

Edited by Michael E. Sadler. With Introduction by Sir William Rothenstein (Pub-lished for the International lished for the International Institute of African Languages and Cultures by the Oxford University Press and Humphrey Milford; 5s.). Negro art, once regarded merely as a museum curiosity, was, we are told, closely connected with religion. Today it is better understood, and the question is how to develop it amid changing conditions. The real thing, as here presented, has an interest and a raison d'être which it is difficult to discern in modernist imitations. in modernist imitations

Sport of various kinds has inspired several seductive illustrated books. Colourillustrated books. Colour-plates by a well-known sport-ing artist, with numerous line drawings, are now collected in book form, on a large scale, in "HUNTING COUNTRIES."

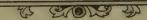
Keith to the realm of psychology rather than zoology.

Topography, once a dry-as-dust subject, has in our day been transformed and humanised by many genial and popular writers. Pre-eminent among them is the author of "Highways and Byways in Sussex." By E. V. Lucas. With Illustrations by Frederick L. Griggs, R.A. (Macmillan; 7s. 6d.), a second and revised edition of one of the most delightful volumes in Macmillan's well-known series. Another very pleasing book in this kind, covering a wider range of territory, is "The Legacy of England." An Illustrated Survey of the Works of Man in the English Country. With 114 Photographs (Batsford; 5s.). The contributors include George A. Birmingham, Edmund Blunden, and Ivor Brown, who now writes in our pages on theatrical matters. His subject here is the English Inn. Another southern county is portrayed very happily, both in prose and illustration, in "Dorset Essays." By Llewelyn Powys. With forty Photographs by Wyndham Goodden (Lane; 8s. 6d.). Typical gems of English scenery, from Cornwall to Lakeland, form a charming album called "The English Countrystide." Photographs by J. Dixon-Scott. Foreword by Rose Macaulay (Ward; 3s. 6d.). Architecture, as exemplified in "the stately homes of England," forms the main motive of two beautifully illustrated books, "The English Country House." By Ralph Dutton. With Foreword by Osbert Sitwell, and nearly 130 Photographs by Will F. Taylor (Batsford; 7s. 6d.); and "Moated Houses of England." By R. Thurston Hopkins (Country Life; 10s. 6d.).

Gardening counts its votaries by the million, and of making many books about it there is no end. "The Living Garden," or the How and Why of Garden Life by E. J. Salisbury, F.R.S. (Bell, 10/6), is "different." It combines horticulture with botany. C. E. B.



Notes for the Novel-Reader: Fiction of the Month.



HERE are three noteworthy books of adventure. John Masefield gives us. Victorious Troy," an epic of the Merchant Service running on the same lines as "Bird of Dawning." Stephen Lawford writes his autobiography, from his pre-war premonition that strange things would happen to him to the constructive work he is employed upon now under the League of Nations, the twenty years between being brimful of enterprise and action. "The Asiatics," by Frederick Prokosch, dashes off the beaten track in a manner ingenious and provocative, and is a first novel of uncommon interest.

The Poet Laureate is faithful to the sailor-folk of the type he loves; the young officer who shoulders responsibility in the face of disaster, and the seamen who respond to his leadership. The Hurrying Angel is a sailing-ship dismasted in a cyclone. Her ordeal is magnificently depicted—the rage of the glimmering, awful sea, the sudden dancing of corpse-lights on masts and gear, the shrieking violence of the wind. Left to his own devices, the master of the Hurrying Angel would have lost her; the storm did the survivors of the ship's company one good turn when it cracked his bones. A hardy seaman, ignorant and intolerant and full of fight, the strain of mine-laying in the war had toppled him over into drunken craziness,

the strain of mine-laying into drunken craziness, very much as solitude and religious mania played havoc with the captain in "Bird of Dawning." Every portrait in Mr. Masefield's gallery of seamen is picked out with a rare distinction against the distinction against the vivid background of catastrophe. It is young Pomfret, the senior apprentice, the Conway apprentice, the Conway boy, who takes command after the mate is dead and the captain knocked out. He and the remnant of the crew clear the wreckage and rig a jury-mast, and, after relief in mid-ocean from a kindly

mast, and, after relief in mid-ocean from a kindly liner, they bring their ship safely to port. All sea-lovers will be grateful for this gallant book.

Mr. Lawford makes it clear that in addressing himself to his son Ivan he has had his eye on a wider audience. Certainly this is far too good a story to have been kept for home consumption. A born rover, sumption. A born rover, and an ex-officer stimuand an ex-officer stimulated rather than depressed after the demobilisation had left him to sink or swim, he jumped at the chance of liaison with the White Army, and succeeded in extricating himself—and other people—from the confusion of its retreat. He took over a com-He took over a com-mission to salve a mixed cargo (including forty cases of the Tsar's special brandy) from the advan-cing Bolshevists at Novo-rossisk. He landed it at

rossisk. He landed it at
Batoum, where his vessel ought to have been, but was
not, blown up on a mine-field; then he proceeded to the
further alarums and excursions that were waiting for him.
His next mission was to help to tackle the problem of the
refugees in Old Serbia, this time as a representative of the
British Government, with Foreign Office authority behind
him. The Balkans tangle kept him busy, and he enjoyed
Bucharest. After that, he was appointed to serve in
Nansen's department, under the ægis of the League of
Nations, and entered upon a further phase of the work
of rescue and reconstruction. He winds up with a spirited
account of his mission to investigate a so-called colony
for European exiles at the back of beyond in Paraguay.
"Youth Uncharted" goes with a swing from beginning to
end.

"Youth Uncharted" goes with a swing from beginning to end.

"The Asiatics" is fantastic; a young man's daydream, if you like, but Mr. Prokosch has the Defoe touch. He blends his imaginative material with an extraordinary assurance. As the story runs, he drifted out of nowhere into Beirut, continued to drift with no visible means beyond the casual assistance of the people he picked up in passing, voyaged to Trebizond, and crossed Asia romantically to fade away, unscathed by innumerable hazards, on the shore at Bangkok. The last you see of him is emerging from a rocky pool, naked in the fine warm sunlight and—"yes, there was no doubt of it, feeling very happy." To speculate about the wanderer himself would be futile. When you sit back to consider "The Asiatics" you perceive it is the tragedy of Asia that has been unrolled before your eyes. And this is what gives Mr. Prokosch's narrative its startling air of actuality, and something beyond its undeniable literary value.

Helen Ashton has gone to Northern Arabia in "Dust Over the Ruins." There the desert atmosphere and the floods and rains of winter contributed to the tension between the five members of an archæological party. To be sure, the party was ill-assorted, not even united in its scientific intention. Old Sir William, who was financing the expedition, liked to get results easily and quickly, and was content with shallow digging and Roman remains. Evan Meredith, who was no superficial archæologist, and was a spoiled, intractable creature to boot, chafed at the old man's amateur direction. Evan, of course, was Welsh. So was Olwen Hughes, Sir William's secretary: Miss Ashton stresses the idiosyncrasies of the Welsh and their influence on the situation. Evan's wife, Valentine, was one of the women who are destined to enchant and madden men, and yet are essentially constant and maternal. She charmed young Robin Cary, the boy of the party, to the verge of heartbreak. These sensitive people, tormenting each other and trapped among the tombs and the dust, narrowly escaped tragedy. Miss Ashton shows us, once again, how brilliantly she can stage and handle an emotional conflict. Eric Linklater has been working off his explosive energy in a collection of short stories. "God Likes Them Plain,"

and executed. The people are real. There are dummies in it, but not the dummies with which we are too often confronted in the machine-made thriller. Read "The Ventriloquist," and watch the strange part watch the strange part they played in the double life of Alfred

they played in the double life of Alfred Mincing.

Bobby Owen has settled down to enjoy the public favour. He has been doing so well in the C.I.D. that it is reasonable to look forward to the time when Scotland Yard will show its appreciation of his services by advancing him a step in rank. Bobby himself appears to be sensible of his worth; he is more staid and more sure of himself than he used to be. But he still keeps the zest of youth; and, as yet, there is no sign of the thickening under the waist-belt that comes to senior officers of the Rorce. happen rapidly when Sergeant Owen is about,

artist, it may be added, travelled Dresden in 1817.

Sergeant Owen is about, and we suppose he is still a youngster as policemen go. Which brings us to "Death Comes to Cambers," and E. R. Punshon at the top of his form. The excellence of his detective stories has never been in doubt, and this is as good as any he has written. The corpse of the unfortunate Lady Cambers was found in a field near her country mansion, where Bobby Owen and Lady Hirlpool, his grandmother, happened to be staying for the week-end. Their hostess's bed had not been slept in, but there was no known reason for her tragic end. Not, that is to say, until Colonel Lawson, the Chief Constable, arrived and—with some reluctance—invited Bobby to take a hand in the investigation. If you are psychologically minded, you may spot the murderer fairly quickly, although Mr. Punshon's false trails are very artfully designed. The only criticism we have to make is touching the introduction of the cipher. There is no sufficient reason for leaving it to Bobby to decipher, and the pace is sensibly checked in the chapter devoted to it. It so happens that that particular chapter can be skipped; but then, no one wants to skip anything in a Punshon novel.

Finally, we come to "The Red Widow Murders" by

novel.

Finally, we come to "The Red Widow Murders," by Carter Dickson. The circumstance of these murders is melodramatic, and the opening adventure is reminiscent of Prince Florizel's introduction to the Suicide Club; due acknowledgment is made to Robert Louis Stevenson. Sir Henry Merivale and Humphrey Masters reappear, and the business of opening up the haunted room in the Mantling mansion in Curzon Street moves forward with solemnity. The roots of the mystery go back to the French Revolution, and there is much to keep in mind as the action progresses. It is a good mystery, but over-elaborated.



"CHILDREN PLAYING AMONG TREES AT WIESENBACH."
DATED 1803 ON THE BACK.



"A VIEW OF A RIVER VALLEY, WITH LOVERS IN A BOWEK



OF A VALLEY WITH FANCIFUL MOUNTAINS."



"A RUINED CHURCH BY THE SEA."

WORKS THAT FETCHED A REMARKABLE SUM IN GERMANY: FOUR DRAWINGS BY C. D. FRIEDRICH, AN EARLY NINETEENTH-CENTURY ROMANTIC, WHICH RECENTLY CHANGED HANDS IN LEIPZIG FOR 12,150 R.M.—PRACTICALLY £1000. Remarkable evidence of the revival in the market for works of art was afforded by the result of the sales of old engravings and drawings at Messrs. C. G. Boerner's, at Leipzig, last month. In particular, the four drawings reproduced here, which are by Caspar David Friedrich (1774-1840), one of the leading German Romantics of the early nineteenth century, changed hands at 12,150 RM.—that is, practically £1000. As Friedrich is comparatively little known outside Germany, this price is in a high degree significant. The artist, it may be added, travelled widely and painted a number of landscapes. He became Professor of the Academy of Dresden in 1817.

the title one, is far from being the best, by the way. Arnold Zweig has worked off something, too, in "Playthings of Time." His wit plays over these sketches, but even the lightest of them is deeply suggestive, which is what one would expect from the author of "The Case of Sergeant Grischa." The art of the short story is a difficult one, but he and Mr. Linklater have taken it in their stride. The Zweig child-studies are penetrating, and Mr. Linklater's craftsmanship evinces itself to perfection in the adroitness with which he opens and ends each story. Both collections are well worth reading. So is Algernon Blackwood's "Shocks," which are mainly, but not solely, excursions across the occult borderland. Some of the shocks have an odd and intriguing twist, without being actually uncanny. "Shocks" itself is a very neatly devised short

BOOKS REVIEWED.

Victorious Troy. By John Masefield. (Heinemann; 7s. 6d.)
Youth Uncharted. By Stephen Lawford. (Nicholson and Walson;

7s. 6d.)
The Asiatics. By Frederick Prokosch. (Chatto and Windus; 8s. 6d.)
Dust Over the Ruins. By Helen Ashton. (Gollancz; 7s. 6d.)
God Likes Them Plain. By Eric Linklater. (Capes; 7s. 6d.)
Playthings of Time. By Arnold Zweig. (Secker; 7s. 6d.)
Shocks. By Algernon Blackwood. (Grayson; 7s. 6d.)
Proposal. By Anne Stretton. (Faber and Faber; 7s. 6d.)
Mr. Theobald's Devil. By Anna Gordon Keown. (Macmillan; 7s. 6d.)
Something to His Advantage. By W. F. Morris. (Bles; 7s. 6d.)
The Ventriloquist. By E. Belasyse. (Davies; 7s. 6d.)
Death Comes to Cambers. By E. R. Punshon. (Gollancz; 7s. 6d.)
The Red Widow Murders. By Carter Dickson. (Heinemann; 7s. 6d.)

MASTERPIECES OF EARLY CHINESE PAINTING: A LONDON EXHIBITION.

By COURTESY OF MESSES, SPINK AND SON



"WILD GEESE AND REEDS": A PAINTING ON SILK ATTRIBUTED TO THE EARLY MING DYNASTY (1368-1644).



"PHEASANTS AND PEACH BLOSSOM": A PAINTING IN COLOURS ON SILK BY WANG JO-SHUI—YÜAN DYNASTY (1280-1368 A.D.).



" MONKEYS AND PEACH": A PAINTING ON SILK
BY I YUAN-CHI-SUNG DYNASTY.



ONE OF A SET OF THREE SCENES IN A PAINTER'S STUDIO:
A PAINTING ATTRIBUTED TO THE SUNG DYNASTY.

MANY of those who have enjoyed or who intend to enjoy seeing the Chinese paintings at Burlington House will be interested to know that an exhibition of some forty very fine Chinese paintings is being held throughout December by Messrs. Spink and Son, at 5, 6, and 7, King Street. St. James's, London, S.W.1. The majority of the paintings, some of which are reproduced here, are attributed to the Sung or the Ming dynasty. The painter of the monkeys and peach, called I Yuan-chi. flourished about the year 1066, under the Northern Sung dynasty.



ONE OF THE SET OF THREE SCENES IN A PAINTER'S STUDIO.



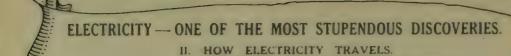
ONE OF THE SET OF THREE SCENES IN A PAINTER'S STUDIO;
A PAINTING IN COLOURS ON SILK.



"WINTRY LANDSCAPE AND WOODCUTTER": A PAINTING ON SILK ATTRIBUTED TO THE SUNG DYNASTY (960-1279 A.D).



"BIRDS ON A WILD ROSE SPRAY": A PAINTING IN COLOURS ON SILK ATTRIBUTED TO THE SUNG DYNASTY.



By PROFESSOR W. L. BRAGG, O.B.E., M.A. Sc.D., F.R.S., Longworthy Professor of Physics in the Victoria University of Manchester.

(Sce Illustrations on the Opposite Page.)

Here follows the second of Projessor Bragg's six articlesa series begun in our last issue—based upon his lectures on electricity delivered at the Royal Institution. Like those of his father, Sir William Bragg, similarly published in our pages in previous years, they have been illustrated by pictorial diagrams drawn specially, under the author's supervision, by Mr. G. H. Davis. The subjects of the remaining four articles are mentioned in the footnote on the opposite page.

N the first article of this series we saw that bodies I could be electrified by rubbing them. If they are insulated they keep their electrical charge, but if connected to a body with opposite charge or to earth the charge leaks away in a flash and is gone. In a thunderstorm a cloud becomes electrified by the formation of charged water drops, and lightning is the discharge in which this electrification rushes away to the ground or to another cloud. The electrical discharge happens so quickly that there is no opportunity to study it while it is taking place.

The discovery about the year 1800 of a way of keeping an electrical current running marks an epoch. The practical use of electrical devices, as well as most scientific investigations of electrical phenomena, all date from this discovery. For the first time, man was able to produce a steady electrical current

and make experiments on it. The discovery was made by Volta, who announced it in a letter to Sir Joseph letter to Sir Joseph Banks, then President of the Royal Society. Volta says in his letter that he had continued experiments on the properties of the electrical current for several years before communicating the results to a learned society. Science was conducted in a more leisurely and tranquil spirit then. Nowadays anyone making a discovery of first - class importance rushes immediately into print, for fear he should be forestalled by others.

Volta made the celebrated "Volta Pile," which was the first electric battery. A pile is made by taking a number of discs of dissimilar metals such as copper and zinc, or silver and zinc, and a corresponding number of sheets of blotting paper (Volta used leather) which have been soaked in salt solution

or in a weak acid. These are stacked on each other in a definite order, copper—paper—zinc—copper—paper—zinc, and so on (see illustration). If now the bottom disc of metal is connected to earth, the top disc is found to be electrified just like an ebonite rod after it has been rubbed. The electrification is very feeble, though it is easy to show it with a delicate instrument like a gold-leaf electroscope, where two light gold leaves fly apart from each other when connected to any electrified body. Though the electrification is so weak, it has a property unlike that of a rod electrified by rubbing. The top plate can be discharged again and again, but always regenerates its charge. In fact, by connecting it to the bottom plate by a The top plate can be discharged wire, an electrical current flows steadily through the wire. This does not last for ever, for the pile finally exhausts itself, just as the battery in a wireless receiver "runs down" when we have turned the instrument on for a certain time. However, a form of electrification has been produced which does not discharge itself in a single flash, but maintains a continuous current continuous current.

In the lecture, I made a Volta Pile with the loose change in my pocket and some bits of blotting paper soaked in water containing a little ordinary salt.

The pile shown in the illustration is made in the following order: half-crown—paper—penny—half-crown—paper—penny. The electrification of the top half-crown can be shown by an electroscope, and if one takes wires from the top and bottom of the pile and touches them to the tip of the tongue, the current can be felt. It gives a characteristic taste in the mouth

and a pricking sensation.

The pressure which drives the current from one end of the pile to the other is measured in Volts in honour of the discoverer of the first battery. The battery in a pocket torch has a "potential" of two or three volts, a motor-car battery has generally one of twelve volts, the electrical grid one of 132,000. The enormous pressure which drives a lightning flash across the sky is about one hundred million Yet the lightning flash is over in an instant, and the total quantity of electricity which flows (we will see later what this means) is of the same order as that given by the humble battery in our electric torch which industriously keeps the current

flowing for a long time.

How does a battery work? To understand this we must try to find out what the electric current is. We are familiar with the way in which an electric current can be led along metal wires to the lamps in our houses, across country by the cables we see strung on pylons, or along the telegraph wires on the highways. If the metallic current is interrupted the current stops, this being the way in which we switch" on or off the lights in the house. This

THE EARLY DAYS OF ELECTRI

tube or vessel from which the air had been exhausted. It consists of a stream of small negatively electrified bodies called electrons. These particles are much bodies called electrons. These particles are much smaller than atoms, atoms being, in fact, made of them. They are always present in a metallic wire, and the electrical current consists in a motion of the electrons along the wire from the negative towards the positive pole of a battery or dynamo. A power station does not "make" electricity. It merely pumps the electrons along the wires to our bouses and back to the power station again.

houses and back to the power station again.

The volume of flow of the electrons along the wire is measured in ampères. The distinction between ampères and volts is apt to be confusing, but will be clear if we liken the voltage to the pressure driving the electrons around a circuit, and the current to a measure of the number passing a given point each second. Everything is built up of these negative electrons associated with positive centres of atoms called nuclei. When we electrify by rubbing we tear electrons away from one body and transfer them to another. The electrons can get back again by rupping along a conductor but they cannot pass running along a conductor, but they cannot pass through an insulator, or they only leak through it very gradually. We can now go back again to the battery

and see why it gives such an apparently endless stream of electrons running from one pole to the other through a connecting wire. If we take a small sphere of copper about the size of a marble, and charge it up to 30,000 volts, we place on it about 100 units of electrical charge. On the other hand, if we count up all the elec-trons in the copper which actually move when a current flows through a wire, we find they represent two billion electrical units.
The amount of electrical charge which can be placed on the sphere electrification is minute as compared with what we could get if we could drain away all the free electrons in the metal. This happens when a battery is giving a current.

The illustration will perhaps make the point clear. A piece of copper and a piece of zinc are

placed in a solution. The little dots represent the placed in a solution. The little dots represent the electrons, and the large circles the positive atoms of metal which they hold together. It happens that electrons are less tightly bound in zinc than in copper, and if an electron could leave the zinc and pass into the more secure home which copper propass into the more secure home which copper provides for it, it would gladly do so. It cannot pass as a free electron through the solution, but if we afford it a path by touching a wire both to copper and zinc, the electrons run along as shown in the illustration on the right. On entering the copper, they can pair off with atoms of copper in the solution and build up more copper metal so that the copper grows. On the other hand, the zinc atoms, bereft of their partners the electrons, drift away into solution. When all the zinc is gone the battery is "run down." You can see the zinc being eaten away in the bell batteries in your house. Finally, all electrons are drained out of the zinc, and we get an enormous transfer from one pole of the battery to the other. When spoons or other articles of base metal are silver-plated, they are placed in a solution of a silver salt. Electrons are poured into the spoons by the current leads, and attract silver atoms from the line in the spoons for metallic silver.

the current leads, and attract silver atoms from the solution so as to make a coating of metallic silver on the surface. A positive silver plate is hung in the solution and is eaten away, keeping the amount of silver in solution constant. The artist has also illustrated the plating of gramophone records.



IN VOLTAGE WITH A FLASH OF LIGHTNING: (FROM LEFT TO RIGHT) A VOLTA PILE, A POCKET TORCH, A CAR BATTERY, THE GRID SYSTEM, AND A LIGHTNING

electric battery, known as the Volta Pile, was invented by Count Alessandro Volta (1745-1827), the Italian physicist, and was by him in a letter of March 20, 1800, to the Royal Society. From his name the words "volt" and "voltage" are derived. Bragg in his article herewith compares the voltage of the various objects shown above with that of a flash of lightning-points out, despite the hundred million volts that drive it across the sky, the flash is over in an instant, and "the total quantity of electricity which flows is of the same order as that given by the humble battery in our electric torch."

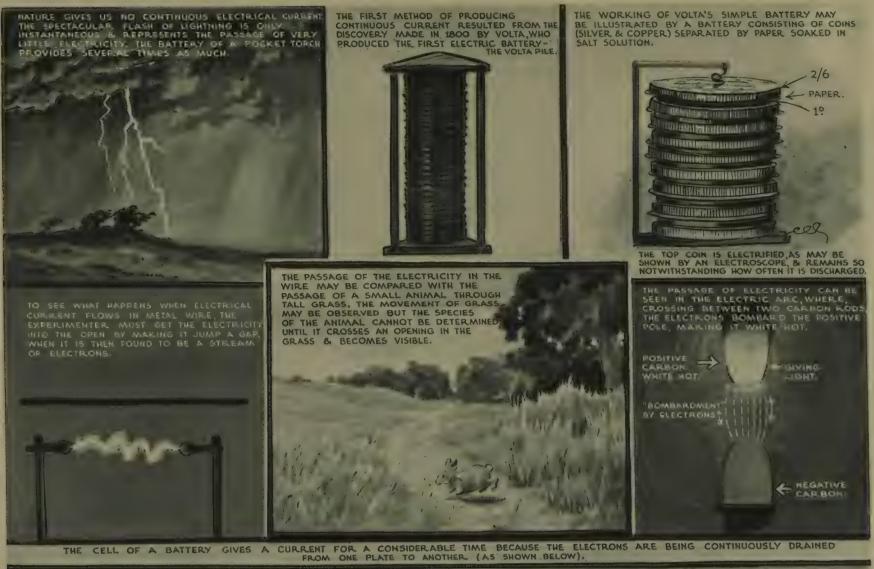
gives us the idea that something is travelling along the wires, but it is hard to understand what it is, because the wire is not altered after the current has gone through. We notice, however, that the wire becomes hot while the current runs. In an electric lamp it becomes so hot that it gives out light.

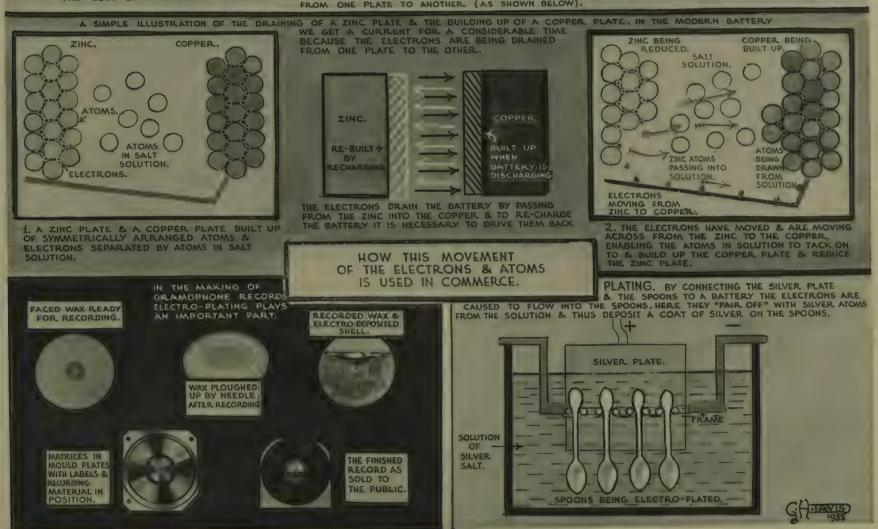
To understand what is happening in the wire, we must get the electrical current out "into the open" and make experiments on it. Sometimes when walking in the country one can tell by the rustling that a small animal is running through the grass or bracken, but it cannot be recognised till it crosses an open space (see illustration). An electrical current can be made to run through an open space where there is no metal wire. This happens, for instance, in the valves of a wireless set when the current which works the loud-speaker jumps the gap between filament and plate. This jumping the gap between filament and plate. This jumping across a space can be illustrated very convincingly by projecting an electric arc on the screen. carbon rods are connected to the mains and allowed to touch for an instant. When separated, the current continues to flow between them (see illustration) and something which is rushing across the gap raises the positive carbon to a temperature so high that it gives out a brilliant light (the arc lamp).

The nature of the electric current was first revealed by Sir J. J. Thomson, who made experiments on the current passing through a discharge

THE BIRTH OF THE ELECTRIC BATTERY; AND ITS MODE OF WORKING.

DRAWN BY G. H. DAVIS FROM MATERIAL SUPPLIED BY PROFFSSOR W. L. BRAGG, F.R.S. (SEE HIS ARTICLE ON THE OPPOSITE PAGE.)





II. "HOW ELECTRICITY TRAVELS": PROFESSOR W. L. BRAGG'S EXPERIMENTS AT HIS SECOND LECTURE.

The above drawings illustrate Professor W. L. Bragg's experiments performed during the second of his six lectures on electricity delivered at the Royal Institution, which we are now publishing as a series of articles with special illustrations. The first article, entitled "What is Electricity?", was given in our last issue, and in it the author said that the discovery of electricity was "one of the most stupendous incidents in the history of mankind for many thousands of years, and will have an incalculable influence on future social development." The second article—"How Electricity Travels"—appears on the opposite page. Here Professor Bragg begins with a tribute to the great discovery made, in the year 1800, by the celebrated Italian physicist, Count Alessandro Volta, who

devised the first electric battery, known as the Volta Pile. From that discovery, Professor Bragg points out, dates the practical use of electrical devices, as well as most of the scientific investigations into electrical phenomena. Professor Bragg then goes on to explain the working of an electric battery and the nature of an electric current, which (as first revealed by Sir J. J. Thomson) consists of "a stream of small negatively electrified bodies called electrons," much smaller than atoms, and always present in a metallic wire. The subjects of the remaining four articles, we may add, will be—(3) Motors and Dynamos; (4) Our Electrical Supply; (5) Telegraphs and Telephones; and (6) Oscillating Electrical Circuits. These articles will appear, in turn, in later issues.



The World of the Theatre.

By IVOR BROWN.



IN PRAISE OF PANTOMIME.

THE English have been great absorbers; to be inclusive has been their strength. That came of necessity. If you live on a smallish island next door to a considerable mainland, you may save your State with a Navy, which

Whittington and Cinderella. But Pantomime was not only an absorber; it was a shock-absorber, and no amount of blows and kicks could finally dislodge it from English affection. So Drury Lane had Pantomime last year and will have it again this year. This entertainment survives



"DISTINGUISHED GATHERING," A MURDER PLAY AT THE ST. MARTIN'S THEATRE: THE DRAMATIC SCENE
AS THE LIGHTS GO UP AND THE UNPOPULAR AUTHOR OF SCURRILOUS MEMOIRS IS FOUND STABBED.

In this scene from "Distinguished Gathering," the play by James Parish now running at the St. Martin's Theatre, are seen
(from left to right) Sanchia Robertson as Lesley Gest, John Garside as Major "Runty" Pearson, Ronald Ward as C. D. Williams,
Frank Vosper as Felix Montague, Roland Culver as Eliot Vines, the murdered man, Ivan Samson as Sir Brian Howet, Joan
Hickson as Dorinda Caswell, Mabel Terry-Lewis as Caroline Beckwith, Noel Hood as Lady Thalia Wilmer, and Barbara Couper
as Judith Montague.

keeps the material enemy out; but you must save your soul with an open door, which lets the mind and the spirit of a larger society come in. So we are of a mixed stock, speaking a mixed language; our Elizabethan literature and drama blossomed with such richness because we were able to graft the New Learning on to the old vernacular. Shakespeare swallowed the Renaissance and did what some of his more learned contemporaries could never do: he digested it. The mental juices of the English have been capable of assimilating most imported types of art and thought. It is characteristic of English life that our very clowns are classical, and that they cannot discuss the sausage of their craft, which they call Boloney or Poloni, without mentioning the ancient Italian city of Bologna.

Think of Pantomime. The name has come all the

cannot discuss the sausage of their craft, which they call Boloney or Poloni, without mentioning the ancient Italian city of Bologna.

Think of Pantomime. The name has come all the way from ancient Greece. It is still an accurate name because it means a Play of All Sorts. Harlequin (Arlecchino) was picked up in mediæval Italy—along with the word Boloney for nonsense. Harlequin, you may complain, has been very nearly dropped, for we rarely see a Harlequinade nowadays. But the spangled man in the black mask, which signifies that he is invisible, has been leaping and slashing with his sword of lath upon our stage for centuries, and he dictated the title as well as the form of the eighteenth-century pantomimes. The fairy-tale which gives the name and the story to our Christmas shows has usually reached us by way of France or Germany or Denmark. The hero, a girl dressed as a boy, and the funny fellow, a man dressed as a woman, are, I think, English contributions. If you are insistent on hunting up origins, you will note that the Principal Boy was in at the birth of English comedy in the lovely form of Shakespeare's Rosalind and Viola; you may also trace the Dame back to those mediæval mummeries of "Twelfth Night," in which the performers changed the aspect of their shape and sex for the fun of the thing. To an English Pantomime may be added a Scottish comedian and, in these years, some jazz tunes from New York. So, each December, we acquire those colossal aggregations of assorted richness which the English—and the Scots too—can tremendously enjoy. Remember Joe Gargery's Christmas dinner; how they started to eat pork-pie after the usual and copious meats, puddings, and sweets? A nation that can put away plum duff after stuffed turkey and sausages, and then pork after that, is a nation admirably endowed and trained for the glorious confusions and irrelevance of Pantomime.

About ten years ago it was said that Pantomime was fainting and failing and closing up its eyes. Year after year there was no Pantomime at Drury La

because it knows how to swallow; it swallowed the new kind of music and the new kind of fun, when American fashions were dominating the English music hall. Whenever a great new comedian appears, it promptly and prudently swallows him. Mr. Charles Heslop, for example, has specially delighted the myriads who have enjoyed "1066 and All That," itself a sort of pantomime with kings for clowns. Drury Lane has wisely swallowed Mr. Heslop.

The English have a considerable sense of ritual. The English commoner likes to see the English noble or the English royalty doing noble and royal things in the solemn, the extravagant, and the traditional way; opening Parliament, for example, with a panoply and parade of crowns and coaches, gold sticks and gold lace. If an angry democrat were to denounce all this as Pantomime, he would be strictly accurate. It is a kind of stage-play, and our Christmas mummery is popular for the same reason that



ARY IUDOR (FLORA ROBSON) GREETS PRINCE PHILIP OF SPAIN ARIUS GORING), WHO COMES TO ENGLAND TO MARRY HER: SCENE FROM WILFRID GRANTHAM'S NEW HISTORICAL PLAY AT THE PLAYHOUSE.

shows and processions are popular. It is the triumph of tradition. We know what we are going to get and we get it. It is commonly said of the art of the theatre that it depends on suspense and the adroit usage of the Unexpected. That is true of one kind of play and profoundly untrue of another. For there is much entertainment which depends entirely upon giving people what they know is coming. Often, when you go to the play, you can tell within a minute of looking at the list of characters and scenes upon your programme exactly what the play will be. Yet musical shows of this ritualistic kind are the most popular form of theatrical entertainment and take far the most money at the doors. Anybody who has been to one Pantomime; indeed, if it does not happen "just so" he will complain bitterly. Pantomime, every year, is a victory for custom, a triumph of the expected thing, a demonstration that familiarity breeds content.

content.

The ritual is stiff and strange; an excellent thing in rituals. It ordains that the cast of this fairy-tale shall be divided into Mortals and Immortals, that Good Fairies enter from the right of the stage and Evil Spirits from the left, that such of the dialogue as relates to the plot shall be written in rhymed couplets, that half-way through the proceedings the story shall be delayed by an enormous Transformation Scene, which is really a series of scenes fading into one another, while innumerable creatures, aspiring to be nymphs, appear in a ballet of flowers or gems; this is not really a ballet at all, but a prolonged promenade of smiling ladies balancing cardboard tulips and other mimic blossoms on their heads or marvellously



"MARY TUDOR," AT THE PLAYHOUSE: FLORA ROBSON (LEFT) AS THE QUEEN AND JOYCE BLAND AS PRINCESS ELIZABETH, HER SISTER.
Flora Robson takes the name part in the new play, "Mary Tudor," which began its run at the Playhouse Theatre on December 12. The production is by Peter Creswell.

bespangled with beads. After about half an hour of this we have an interval, and then we start again to follow Whittington's or Aladdin's adventures, which are now increasingly interspersed with knock-about fun and sentimental songs. The whole must not last less than four or five hours. Pantomime means value for money.

The whole thing is, by any standard of logic, so absurd as to be inexplicable. We mix the most delicate kind of fantasy with the roughest kind of vaudeville. We go tripping into Alsatia and find a couple of cross-talk comedians bandying the humours of the East End street. Pantomime, let us admit, is often vulgar as well as vast and various; but vulgar, after all, originally means common, of the populace. In it the darlings of the people reappear as certain traditional characters, and they have to keep their old favour by making their old jokes. Pantomime is the Music Hall wearing its paper hat for a Christmas cracker. Not suitable for children? Not for the smallest, certainly. But for every boy and girl who likes to think himself five years older than he or she is, it is perfect entertainment. For what more flatters a schoolboy than a jest which assumes him to be a man about town? And what more fun than to be flattered?



When everything has been as near perfect as this world allows—the floor, the band, above all, one's friends—it's good to get back and talk it over with a refreshing glass of Whitbread's Pale Ale.





PAGE FOR COLLECTORS.

THE CHINESE EXHIBITION: THOUGHTS ON THE SCULPTURE.

By FRANK DAVIS.

successive generations were such exquisite literary gentlemen, agreeably occupied with recondite allusions and the more refined personal sensations. The whole system of education, with its insistence upon interminable variations on classic themes, was cloistered

and "donnish" to a degree: the characteristic connoisseur of the eighteenth century is the Emperor Ch'ien Lung, who, whatever his genius as a ruler, was an interfering old busybody in his later years, having his own second-rate poems placed upon innumerable antique works of art.

(Let us be thankful none of our own

monarchs was equally absurd.)

All this brings me again to the opinion I have expressed in this page more than once—that one can go to this Exhibition with no knowledge and without a catalogue and still find a great deal which is immediately understandable. I admit that early jades require a little explanation, and there are a thousand allusions and technicalities one can investigate later; but it is the grand, simple things which are the real gems of the show, and it is in sculp-ture one can most easily find them.

To many eyes a single carving will be worth all the rest. (Curious how none of the notices I have read has drawn attention to it.) It is a panel from the tomb of T'ang T'ai Tsung, lent by the University Museum, Pennsylvania. Date about 650 A.D. It shows the relief a hearded grown helding the in relief a bearded groom holding the dead Emperor's charger, Sa-lu-tzŭ (Rushing Wind). Here is something simple and moving, noble and dignified, which will surely attract every lover of horses in the country. Catalogue No. 2387. (By the way, I have just met a horsey gentleman who tells me he knows nothing about art, but that to see a good representation of a horse you have to look at this carving or at a painting by George Stubbs.)

An equally great work in a different idiom is the dynamic headless Bodhisattva (No. 2498) lent by Mrs. John D. Rockefeller, illustrated in our issue of Nov. 30 last. This is placed in the centre of the lecture room, and it is well worth your careful attention from every possible angle. I have been trying to make up my mind whether it is, or is not, the most beautiful carving I have yet seen. I shall never reach a decision

on that point, but the thing attracts
me like a magnet every
time I go into the building. The poise of the body, the lines of the drapery, the mingled power and refinement, the elegance, the moving grace—as well photograph a sunbeam as try to describe this masterpiece.

Naturally, as befits genuinely religious sculpture, the general sentiment is one of gravity, yet all the time one feels that these Buddhist saints have the warm humanity which the English carver gave to his own sacred personages in the thirteenth century. Look, for example, at the Votive Stele, dated A.D. 520, lent by Baron von der Heydt: slightly more genial perhaps than most Christian representations of similar scenes, but in essentials inspired identical hopes and fears (No. 2398). Piety obviously knows no frontiers, and men's minds react in much the same way whatever their geographical situation: certainly in Chinese sculpture East and West are very close together whatever may the opinion of later Chinese arbiters elegance.



A VOTIVE STELE IN BROWNISH LIMESTONE; DATED 520 A.D.

WHEN one meets a paragon of virtue, it is always agreeable to discover even the smallest flaw in the smooth façade of perfection. Apparently that marvel of sensibility, the authentic Chinese lover of art, has his blind spot: he does actually, has his blind spot: he does actually, it seems, look upon his country's sculpture as of no account—for which we think him odd, and he, no doubt, thinks us odder still. For once East and West fail to find a common understanding. I don't think I'm out of touch with current opinion in Europe when I say that of all the Europe when I say that of all the achievements of the Chinese genius, sculpture is that which is most easily understood and appreciated. This statement may shock the Chinese them-selves, and they may, for all I know, be busy at this very moment finding excuses for our curious taste, though they will be far too polite to say so. Anyway, if it is a fact—and I am assured that it is—that the marvellous sculptures to be seen at Burlington House to-day are considered in their country of origin beneath the notice of a man of education, then we have some grounds for abandoning that attitude of pleased humility which we are compelled to adopt when confronted with the finest porcelains and the finest paintings. In this single department we can strut about, I suggest, and claim that we have a deeper understanding than the Chinese themselves. "A prophet is not without honour, etc."

Given our particular background, this attitude is no doubt inevitable we have such an immense tradition behind us, and our knowledge of the plastic art of the past has been immeasurably increased during the

last two decades. But, however learned we may be about the development of Sumerian and Egyptian and Greek sculpture, the real basis of our appreciation of the particular forms of Chinese carving is to be found in our own mediæval traditions, which grew out of our own soil long before our ancestors had heard of either Greece or Egypt or China. The pundits gravely inform us that the resemblance between Chinese Buddhist sculpture of the fifth to the ninth centuries A.D. and that to be seen in Chartres Cathedral and Lincoln and a thousand other great edifices in Western Europe is merely superficial: I say their differences are superficial, and that deep down within is a similarity in outlook, in faith, and, as often as not, in an impish and delicious humour. believe that the masons who helped to carve the figures on Rheims Cathe-dral would feel at home when confronted with the carvingsat this Exhibition. Presumably, this moving and vigorous type of art was not much appreciated from, at any rate, Sung times onwards, because the arbiters of taste in



A STONE PANEL FROM THE TOMB OF T'ANG T'AI TSUNG (REIGNED 627-649 A.D.): SA-LU-TZU (RUSHING WIND), A BAY CHARGER RIDDEN BY HIM AT THE SIEGE OF LO-YANG AND SEVEN OTHER BATTLES.

T'ANG DYNASTY (618-906 A.D.).—[Lent by the University of Pennsylvania Museum.]

Why not ask a

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FINANCE AND INVESTMENT

By HARTLEY WITHERS.

A MERRY CHRISTMAS FOR INVESTORS.

THOSE who have supported our country's industries, by holding its shares and securities, can face the festive season with added festivity.

from the contemplation of rising profits, increased dividends, and favourable prospects, clouded only by difficulties and uncertainties abroad, and by the fact that the progress so far achieved has been partial, leaving large areas of the country still suffering from acute depression. Even this last-named cloud, however, is not quite as thick as it was; since some of the industries that have lately been most severely buffeted by the economic blizzard and its after-

effects have begun to show welcome signs of The November employment figures, which showed an increase of 45,000 at work, as compared with the figures of the previous month, and of no less than 315,000 when set by those of the previous year, were particularly encourage ing from this point of view. They indicated further improve-

ment in the activity of coal-mining, the cotton industry, iron and steel manufacturing, engineering, shipbuilding and repairing, and in the dock and harbour services. Among these, coal-mining, cotton and shipbuilding have long been conspicuous examples of depressed industries; and their continued revival has done much, or at least something, to bring back hope in areas in which despair has had too long an innings.

It is certainly an amazing example of stubborn British determination, this spectacle of more active shipbuilding, in view of all the difficulties with which our shipowners have to contend in keeping their flag flying in foreign, or even in our own waters. There was lately or even in our own, waters. There was lately a paragraph in The Times City article calling attention to the inauguration of regular calls at Southampton, in the westward sailings between Europe and the United States, of the Baltimore Mail Steamship Company. This new departure, which is to start in the New Year, was welcomed by The Times as an indication of improved passenger and goods traffic between this country and America. So far, so good; but the paragraph went on to observe that the five vessels the line that will be used in this service had been reconditioned by means of financial assistance granted under the Construction Loans provisions of the Merchant Marine Act, 1928, amounting in each case to more than a million dollars; and that, under the same Act, a rate of subsidy of six dollars a mile was granted for a regular service between Baltimore and Hamburg. A similar subsidy was given for a regular service between London and New York, and by such methods of spoon-feeding, the American Trans atlantic services have been enabled to face the severe depression of the last few years, with a certain amount of equanimity, at the expense of the American taxpayer.

With the woes of the American taxpayer we need not pause to sympathise, for he is still very lightly taxed as compared with the vigorous fleecing process which is applied by our revenue authorities. But these spoon-fed American ships sail not only at their country's expense, but also at that of the shipowners of other nations who have not the wide-open American public purse to dip into. The Times story went on to add that, in the meantime, the much older established but unsubsidised British sailings between London and the United States of the Atlantic Transport Company have had to be abandoned; and that a similar fate seems to have overtaken the long-

established Transatlantic British services of the Leyland Line; and the conclusion was drawn, from which there certainly seems to be no escape, that unsubsidised British services have been driven off the sea by subsidised American services. It was also suggested that, failing financial assistance, a similar change may be witnessed on the Trans-Pacific routes. Little consolation is to be got from an assurance that no one has more sympathy with the British lines than American shipping managers—the spectacle of the latter weeping for their defeated British competitors, while pocketing their American subsidies and collaring the ocean traffic, is grimly humorous, but not really amusing.

A NEW RAILWAY BRIDGE OVER THE NERBUDDA RIVER, BOMBAY PRESIDENCY: A FINE EXAMPLE OF ENGINEERING BY AN INDIAN FIRM.



ONE OF THE SEVENTEEN TWIN WELL, MASS CONCRETE PIERS OF THE NEW NERBUDDA RAILWAY BRIDGE—EACH WELL BEING FOUNDED AT ABOUT 102 FEET BELOW LOW-WATER LEVEL.

FOUNDED AT ABOUT 102 FEET BELOW LOW-WATER LEVEL.

The Governor of Bombay (Lord Brabourne) arranged to open the new Nerbudda Bridge at Broach on December 20. Its construction, the work of Messrs. Braithwaite and Co. (India), Ltd., has been completed approximately fifteen months ahead of contract time—a notable engineering feat. The bridge is designed to carry heavy mineral traffic on the main line of the Bombay, Baroda, and Central India Railway across the Nerbudda River, a stream which empties itself into the Gulf of Cambay. It is nearly a mile in length, and consists of fifteen steel spans of 282 ft., one span of 247 ft., and an approach span. The bridge carries a double track and replaces an old single-track bridge. The contract price was about £405,000.

This American determination to use her war-made wealth in order to defeat the shipping and other industries of the nations that owe her money is a habit that she will have to unlearn, if she continues to call on them to pay their war-debts, as to which the usual reminder was sent from Washington to London last week. The chairman of the P. and O. Steamship Company was also emphatic, at the meeting of shareholders (who have gone without dividends for four years), on the subject of the highly subsidised foreign

lines, which "in certain directions are rapidly making it impossible for British ships to remain a

British ships to remain at sea at all." He pointed out that the

losses incurred by the two Empire companies concerned in the Pacific liner trade continue; not only has it been impossible for years to earn a single penny for depreciation on the ships carrying on these services, but the out-of-pocket expenses are so enormous that no private enterprise can much longer bear this exhausting burden. It has, Mr. Shaw contended, become clear that if the Governments of Britain, Canada, Australia, and New Zealand wish

to keep any service of British ships across the Pacific, they will have to adopt the policy of assisting those who have been keeping the British flag flying at such heavy loss.

In the meantime, while foreign countries impose restrictions, direct and indirect, on the shipping of other nations, British trade is open to them all. And not only does our

Government apparently forget the claims of our merchant service when distributing protective assistance to our industries, but it actually hampers it through the restrictions, harshly and abruptly imposed, in connection with the quota system. One day at the end of October meat shippers from Melbourne, were, without previous notice, advised that their quotas of mutton and lamb for arrival in the United Kingdom up to the end of this year had already been exceeded, and that they must therefore cease shipping forthwith. Consequently, 12,000 carcases which had been booked for shipment by the *Moldavia* had to be cancelled, and about the same quantity, due to come by the next boat, had to be treated in the same way. It was too late to secure bookings from other ports to replace the Melbourne cancellations, although the P. and O. had previously been obliged to refuse considerable quantities of meat from Sydney in order to keep Melbourne's allotment intact. Business of all kinds is an exasperating worry in these times, owing to the vagaries of Governments and the difficulties that they create, by well-meant attempts to regulate trade, for those who are trying to earn a living by supplying the community. But when one considers all the obstacles put in the way of British shipping by foreign Governments, one might surely expect our own to try to avoid arbitrary interferences of this kind with their shipments.

Perhaps an even worse instance of the bad effects of official interference with trade came from Hull, where an acute scarcity of coal was reported, with the result that ships were unable to get cargoes and bunkers at the time when they are required to be loaded at the shipping docks; and no improvement in the situation is to be expected this month. The Member of Parliament for South-West Hull has, we are told, communicated with the Mines Department, and has been assured that the department is "in close touch with the problem." Which must be consoling for the unfortunate coal-exporters, who have to pay demurrage at the rate of £25 per

day. Here are two of our most important industries, from the point of view of foreign trade and our trade balance, coal and shipping, both of them depressed by years of acute suffering, hampered and exposed to unnecessary expense by official muddling and mismanagement, and the departments concerned are in close touch with the problems! And then some hopeful "reformers" want to hand over the whole conduct of industry to the control of the bureaucratic gentlemen who manage things so nicely for us, and are so blandly polite about it



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OUTSTANDING EVENTS DURING THE WINTER SPORTS SEASON IN AUSTRIA 1935/36

Vienna: International ice hockey matches (December and January) Badgastein (province of Salzburg): Toboggan and ski races (January) Seefeld (Tyrol): International ski-jumping and slalom races. International skating competition (February 17th to 19th)

Innsbruck (Tyrol): F.I.S. races 1936. Downhill and slalom races of the Fédération Internationale de Ski. Ice hockey matches, figure skating competitions, curling, etc., will take place in connection with these races (February 21st and 22nd)

Semmering (1½ hours from Vienna by rail): International bob races (February 22nd and 23rd). International ski-jumping for the Zimdin Cup (March 1st)

Klagenfurt (Carinthia): International ski-jumping (February 23rd) Kitzbuehel (Tyrol): International ski-jumping (February 25th) Lech on the Ariberg (Vorariberg): Madloch downhill races (Feb. 29th) St. Christoph on the Arlberg (Tyrol): May ski-races (May 3rd) Heiligenblut (Carinthia): International Glockner ski-races (May 31st)

SOCIAL EVENTS IN VIENNA

Opera Ball (January 25th)

International Bridge tournament of the Austrian Bridge League (to be held in Vienna and Semmering) (January 25th to February 3rd) Ball of the City of Vienna (February 6th)

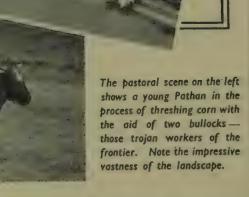
Numerous Hunt Balls, Carnivals and Masked Balls, Artists' Balls and pageants at which national dress is worn (January and February) Vienna Spring Fair (March 8th to 14th)

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SEE INDIA



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AN ALADDIN'S CAVE OF SUBTERRANEAN WONDERS.

(Continued from Page 1134.)

attract many people by the roar of the water as it falls into their small craters. It is hardly conceivable what a vast volume of water such a cavity can swallow. All these cavities are transformed below ground into large or small crevices. Also of interest is the fact that they all lie in crookedly winding rows, so marking distinctively the subterranean water current. In the immediate neighbourhood of Macocha are a hundred and eleven of these cavities or

marking distinctively the subterranean water current. In the immediate neighbourhood of Macocha are a hundred and eleven of these cavities or pot-holes, divided into fourteen groups, but, by accident, in parallel galleries more or less vertical on top of one another. This formation conforms to a geological law. The cracks in the primary limestone follow the direction in which the lime strata lie—from north-east to south-west, and the faults or cracks (diaklas) which have penetrated the transversal cleavages, run in the direction of these cleavages—from north-west to south-east, and so the shapes of the caves are altered. It is just as if one could see, through the position of these cavities, the shapes of the caves, as one could see through the Röntgen Rays. In this matter, Geomorphology is the surest leader.

The mouths of these cavities are filled with deposits and they lead more or less deeply to open precipices. It is possible to assume in advance the depth of each precipice with the aid of the hypsometrical method. They are all 100-150 metres deep and natural ventilators. Macocha is nothing else than such a pot-hole, whose ceiling has broken through. Three kilometres north of Macocha is the tremendous cavity called "Měšiny," which is twice as big as Macocha. South of Macocha is the "Dolina" cavity, the same size as Macocha. South of Macocha is the "Dolina" cavity, the same size as Macocha. The most important one is "Měštikád," from which comes a strong draught, which blows still stronger when the water flows into the "Rasovna." From this fact we concluded that below this pot-hole, "Měštikád," the rivers from Sloup and Holštýn flow together. At the foot of the cavity "Měštikád" are two windy currents—two throat-like passages which gradually slope to form one final cupola or cave. "Měštikád" will be deeper than Macocha.

The man who explores these three cavities will open up innumerable cavern wonders. It will be just like the story of Aladdin again. The words "Onen

The man who explores these three cavities will open up innumerable cavern wonders. It will be just like the story of Aladdin again. The words "Open Sesame" will reveal wonders no one ever dreamed of yet. It was unfor-Sesame" will reveal wonders no one ever dreamed of yet. It was unfortunate that a political crisis hindered these further explorations. I am only a small man in my own country and I am not rich. Patrons such as Lady Houston—whose fame is known even here in the heart of Europe—do not exist in Czechoslovakia. I am grateful for the opportunity here afforded me to give, for the third time, an account of what is happening in the geological world in my country, to the English nation and all English-speaking people throughout the world, through the columns of the most up-to-date illustrated paper. I hope to be able to inform its readers later regarding our explorations north of Macocha.

THE PLAYHOUSES.

"MARY TUDOR." AT THE PLAYHOUSE.

"MARY TUDOR." AT THE PLAYHOUSE.

M. WILFRID GRANTHAM'S play may be regarded as a very competent piece of whitewashing, but of drama, particularly considering the period, there is astonishingly little. The prologue, in which Mary renounces her rights to the throne, goes for nothing, for not only is it a dull scene in itself, but in the first act, seventeen years later, we see her on the throne. Miss Flora Robson gets the first touch of emotion in the scene in which she welcomes Philip of Spain as her future husband, and her final scene, in which she allows him to return to his own country rather than involve England in a war between Spain and France, is distinctly moving. In these two scenes Miss Robson proves once again that she is one of the best of our emotional actresses. It is to be regretted that her choice of plays is not likely to bring this fact to the knowledge of a wider public. Miss Joyce Bland makes an attractive, flirtatious "red-head" of Princess Elizabeth, and inasmuch as the author wrote the part on these lines, she deserves nothing but praise for her performance. Despite the handicap of a beard that would have rendered most actors speechless, Mr. Lawrence Anderson used his fine voice to great advantage as Bishop Gardiner. Mr. Marius Goring is the Philip voice to great advantage as Bishop Gardiner. Mr. Marius Goring is the Philip of Spain, in a costume rather like that of a pantomime principal boy.

"SLEEPING BEAUTY: OR, WHAT A WITCH." AT THE VAUDEVILLE

Mr. André Charlot's first pantomime is a pleasant combination of revue and fairy tale. The first half follows the story of the Sleeping Beauty with and fairy tale. The first half follows the story of the Sleeping Beauty with commendable fidelity, enlivened, however, with such modern touches as the selling to the princess of a spinning wheel upon the instalment plan and the arrival of Prince Florizel in a helicopter aeroplane. Mr. Patrick Waddington makes a fine "principal boy," wearing his clothes with an air, while Miss Nancy Burne is as gentle a princess as the heart of any prince could desire. Miss Gertrude Musgrove was refreshingly unlike the usual pantomime queen; an amiable creature with occasional outbursts of high spirits. The second half wisely had a more adult appeal. Wisely, for the reason that the laughter of children is in itself sufficient entertainment for the first hour or so. It was half wisely had a more adult appeal. Wisely, for the reason that the laughter of children is in itself sufficient entertainment for the first hour or so. It was here that Miss Nellie Wallace, as Witch Carabosse, "ran away with the show." As a sportsman, singing of the joys of a day on the moors, as a dressmaker, a concocter of love philters, and as a blushing bride, she kept both young and old in paroxysms of laughter. Mr. Bert Coote brought his gift of futility and pathos into singing "Don't Tease the Bees, Please"; judging by the way the youngsters joined in the chorus, his request will be honoured. Miss Peggy Rawlings was a charming Fairy Silverwings. Pleasant music, pretty costumes, and adequate humour make this an admirable entertainment for both young and old. for both young and old.

That fine institution, the Bernhard Baron Charitable Trust, recently That fine institution, the Bernhard Baron Charitable Trust, recently made its annual series of bequests. The Trust was created in 1928 by the late Mr. Bernhard Baron, founder of the firm of Carreras, Ltd. Under the terms of the Trust, charitable grants were to be made each year on Mr. Bernhard Baron's birthday (Dec. 5). This year over 350 hospitals and other charitable organisations received cheques, amounting in all to £41,317. The grants included £16,200 to London hospitals, £9640 to hospitals outside London, £4625 to orphanages, cripple institutions and blind associations, and £9852 to Jewish charities. Since the formation of the Trust, and including this year's grants, £300,212 has been distributed. The Trustees, it may be noted, are the Marquess of Reading, Mr. Edward S. Baron, Mr. H. W. Danbury, Mr. W. H. Louden, and Mr. Albert I. Belisha.





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NOTES FROM A TRAVELLER'S LOG-BOOK.

By EDWARD E. LONG, C.B.E., F.R.G.S.

WINTER-TIME IN AUSTRIA.

A I.I. who have visited Austria in summer know the thoroughly Alpine character of the country, with its lofty mountains, deep valleys, and wide table-lands in almost all districts, for it is traversed, from west to east, by two parallel ranges of the Alps which are extensions of the mountain systems of Switzerland and Northern Italy. But, delightful as it is in its summer garb, delightful as it is in its summer garb, it has to be viewed in winter-time for an appreciation of the full measure of its beauty, and an added attraction at this time of year is the splendid facilities it offers, in a large number of centres, for the enjoyment of winter sports. Every effort has been made to induce holiday-makers from this country to sample Austria's winter-time hospitality sample Austria's winter-time nospitality by the prevision of special trains to many winter-sport resorts, a 60 per cent. reduction of fares on the Austrian Federal Railways, with an inclusive price for rail travel and hotel accom-modation, and facilities for acquiring Austrian currency at a favourable rate

of exchange The vari of exchange.

The variety in winter-sport resorts Austria is able to offer makes it possible for one to choose just the one to suit one's fancy, and prospective visitors will be greatly helped in this respect by the guide-book issued by the Austrian Federal Railways, which contains a great deal of useful information concerning every resort. A district very popular with English winter-sport enthusiasts is that of the Arlberg, where St. Anton, of Hannes Schneider ski-ing fame, provides splendid ski-fields in its immediate neighbourhood and opportunities for tours to picturesque St. fame, provides splendid ski-fields in its immediate neighbourhood and opportunities for tours to picturesque St. Christoph, 6000 ft. up, which has such good snow that ski races are held there as late as the beginning of May! Zürs and Lech are also attractive centres in the Arlberg, and Lech, this season, promises some fine ski-racing on the Madloch Joch at the end of February.

Kitzbühel has a reputation for all-round sport and a bright social life which is very well deserved, and to all who are fond of downhill ski-ing, the cable railway which takes one from Kitzbühel up to the Hannenkamm (6000 ft.) in a few minutes, and gives the opportunity for a run down with a choice of over a score of different routes, is a great

Kitzbühel, together with Seefeld and Klagenfurt, in Carinthia, is to have International Ski-Jumping competitions during the third week in February; and



WINTER SPORTS IN AUSTRIA: SKIERS AT HUT IN A WONDERFUL SITUATION AT ANKOGEL, NEAR MALLNITZ, IN CARINTHIA.

Pholograph by Leo. Rosenberg, Vicnna; Copyright "Oc. V. W."

Seefeld, famed for its fine ski slopes, is also to have an International Skating Competition. Klagenfurt, by the way, has a natural ice-rink, ten miles in length, when the Wörther Lake freezes up, and it is then a great ice-yachting centre. At Heiligenblut, a fine centre for ski tours, also in Carinthia, and lying at the foot of the Gross-glockner, there is ski-ing up to the end of May, when the International Glockner Ski Race is held.

At Badgastein and Hofgastein, in

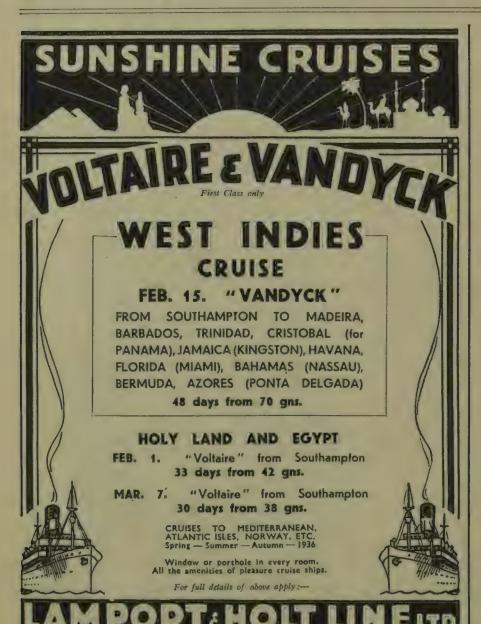
At Badgastein and Hofgastein, in the beautiful Gastein Valley, it is possible the beautiful Gastein Valley, it is possible to take the cure and to enjoy winter sports at the same time, for each of these renowned spas of Austria has a winter season, and each has excellent facilities for winter sports—Hofgastein has a great Sprung-schanze, or ski-jump, which is reckoned among the best in

Europe, and both it and Badgastein are noted for the variety of ski tours they offer. Bad Ischl is another Austrian spa which is open in the winter-time, and is a centre for winter sports, and it has the advantage of being within two hours of Salzburg by rail.

And then the visitor to Austria in winter-time can spend a holiday in a picturesque old town such as Innsbruck, with its narrow areaded streets, and find old frescoed houses, and still enjoy winter sports, for Innsbruck is situated right amongst snow-clad mountains, to the heights of which you are transported by rail—for a glorious skirun down. At the same time facilities for skating, curling, ice-hockey, and tobogganing are among the best possible and all are near at hand; whilst during February, Innsbruck will be the scene of numerous interesting winter-sport competitions. By going further afield, the wonderful winter gaiety of Vienna, Austria's beautiful capital, may be enjoyed—with its artist and costume balls, and its many other very alluring social attractions. You have also opportunities in Vienna itself for skating—on the largest artificial ice-rink in Europe—skating and ice-yachting at no great distance away, on the Neusiedel Lake; and at Semmering, a short railway journey from Vienna, there is enjoyable ski-ing in plenty, and such good bobsleighing that this popular resort has been selected for an International Bobsleigh Race, which will be held there on Feb. 22-23 next.



THE SPLENDOUR OF AUSTRIA'S WINTER SCENERY: A VIEW OF THE MOUNTAINS FROM THE GROSS-GLOCKNER ROAD, NEAR THE EDELWEISSWAND (SALZBURG). Photograph by Ernst Fuchs, Zell-am-See. Copyright "Oe. V. W."



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THE CHRONICLE OF THE CAR. By H. THORNTON RUTTER.

OVER fifty entries have already been received for the Royal Automobile Club Rally, which will take place on March 24-28, 1936, terminating at Torquay. The maximum number of entries that can be accepted is four hundred, and not more than one hundred will be allowed to start from any one control. The average speed to be maintained is 24 miles per hour. In each of the four years that the Rally has been held, a very large number of entries, averaging about one hundred and fifty, has been received by the Club in the last three days before entries close. Such a last-minute rush naturally involves a considerable amount of extra work and trouble, especially so when, as last year, nearly fifty entries had to be returned, the total number having been exceeded. The R.A.C. therefore appeals to intending entrants to co-operate with the Club by sending in their completed entries as early as possible. This not only ensures acceptance, but also leaves an ample margin of time to adjust any small difficulties that may arise so far as starting controls, times, routes, teams, and other matters are concerned

The 1936 Rally also will have definitely placed winners of the Rally, as well as those successful competitors who gain the cups and trophies presented various donors for these entrants starting from each of the nine different towns, such as the London

Cup, the Glasgow Cup, etc. The awards also include two prizes for the best performance from women entrants (one for closed and the other for open cars), entrants (one for closed and the other for open cars), a motor manufacturer's team prize, and a club team prize. To these must be added the coachwork competition on the final day for cars which have completed the road section of the Rally. In this competition there are 21 classes, based on price and types of coachwork. Three champion cups will be awarded for the best open car, the best two-door closed car, and the best four-door closed car.

Christmas is a time for visiting one's friends and

Christmas is a time for visiting one's friends and relations, so motorists leaving their cars outside houses are asked to take special precautions to avoid accidents. The increase which has lately become apparent in the number of accidents caused at night by lighted vehicles drawn up on the wrong side of the road—that is to say, on the right-hand side facing oncoming traffic—has led to the issue of a warning by the Royal Automobile Club. On an insufficiently lighted road this practice is highly dangerous, for the driver who is faced with white lights instinctively draws over to his left in an endeavour to pass them on the correct side. By the time he has discovered the true state of affairs, it may be too late to avert an accident. Even more dangerous is the habit—often due to for-getfulness—of leaving the head-lights of a stationary car full on. This is confusing enough when the car is parked on the correct side of the road; when it is on the right-hand side, it is impossible for the drivers

of oncoming vehicles to see anything at all, and it is a practice most strongly to be condemned, in addition to being a contravention of the Highway Code. The R.A.C. therefore urges all drivers to exercise the greatest care when leaving a lighted vehicle on any road after dark.

In our issue of Nov. 9 we published a photograph of a streamlined ferry-boat, stating that it operated from Portland, Maine, U.S.A. In saying this, we followed the information at our disposal; but, as several readers have pointed out, we were misinformed. The true facts are that the ferry-boat operates from Seattle, Washington, and the background of the photograph shows the Seattle water-As we said, it is the first boat of its kind.

The 1936 edition of the indispensable "Whitaker's Almanack" has just been published. It is, of course, on the familiar and famous lines, more than which could not be desired. Incidentally, it should be noted that it contains the new Government and a conspectus of the National Government as reconstituted after the General Election. The index contains over 30,000 references! The Almanack is published in three forms: (a) Complete Edition, 1000 pages, bound in cloth, 6s.; (b) De Luxe Edition, 1000 pages, half-bound in leather, 12s. 6d.; and (c) ShorterEdition, 720 pages, bound in paper cover, 3s.

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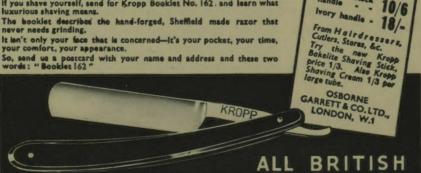
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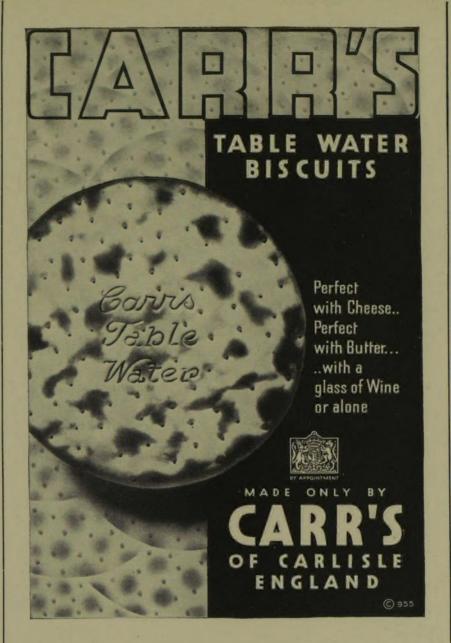
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